PERCEPTIONS OF LEADERSHIP AMONG WOMEN IN ACADEMIC MEDICINE: A CASE STUDY COMPARING THE PERSPECTIVES OF FULL-TIME FACULTY WITH AND WITHOUT INSTITUTIONALLY DEFINED LEADERSHIP TITLES

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ABSTRACT

PERCEPTIONS OF LEADERSHIP AMONG WOMEN IN ACADEMIC MEDICINE: A CASE STUDY COMPARING THE PERSPECTIVES OF FULL-TIME FACULTY WITH AND WITHOUT INSTITUTIONALLY DEFINED LEADERSHIP TITLES

Maya Jalbout Hastie

Despite progress made over the past decade, women in medicine are underrepresented in advanced academic leadership positions. This qualitative case study explored the perceptions of full-time women faculty at one large urban academic medical center regarding leadership trajectories within academic medicine, comparing those who are and those who are not in institutionally-defined leadership roles. The purpose of the research was to explore participants' perceptions of the characteristics of effective leadership, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they may face in seeking such positions, what rewards and sacrifices they may have experienced on their career paths, and how and what they learned in the process.

In-depth, semi-structured interviews were conducted with 27 full-time women faculty members of one large urban academic medical center. The participants were recruited based on leadership positions, years in practice and specialties.

Several key findings emerged from the interviews. First, all participants described interpersonal skills as important elements of effective leadership in academic medicine. Second, women described gender biases in the workplace as challenges on their career paths. Also, work-life balance and the unique demands placed on working mothers were discussed. Third, mentoring relationships were perceived as facilitators of career

advancement. Also, a majority of participants described having an interest in and self-efficacy toward leadership. Fourth, women described focusing their learning on acquiring organizational and administrative skills, through a combination of informal and formal learning. Most of the learning described was incidental and unplanned. Experiences were important for the incremental development of leadership proficiency. Women engaged in reflection to improve performance and to evaluate self. The benefits of engaging in communities of practice were described.

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I am grateful to the women who trusted me with their stories. I am humbled by your paths, your resilience, your strength, and by your steadfast commitment to "doing the right thing." I hope this work serves to amplify your – our voices.

This work is the culmination of a journey of emotional maturation, professional development, and personal growth.

This journey started decades ago with the love, support, and trust of my parents, who taught me, through their love and sacrifices, how to be resilient and compassionate. The inspiration for this work is my mother, Hind, my first role model: a dedicated professional and a loving, present mother.

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Chapter I

INTRODUCTION

This research was intended to explore the perceptions of full-time women faculty at one large urban academic medical center regarding leadership trajectories within academic medicine, comparing those who are and those who are not in institutionally-defined leadership roles. The purpose of this qualitative study was to explore participants' perceptions of the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, what rewards and sacrifices they experienced or may have experienced on their career paths, and how and what they learned in the process. In this chapter, an overview of the background of the topic is presented in the context of academic medicine and includes a description of leadership positions, a review of women faculty's representation in those positions, a description of some of the challenges women face during their careers, and a discussion of the importance of women's contributions to leadership. This is followed by a presentation of the problem, a discussion of the purpose of the research—including research questions, the approach used in this study, the underlying assumptions, the rationale, and relevance of the study outcomes to academic medicine.

Background

Academic medicine can be defined as the practice of medicine in an organizational setting that provides opportunity and support for clinical patient care, for research endeavors, and for education of physicians and medical students. It has been described as the health sector's capacity to "think, study, research, discover, evaluate, innovate, teach, learn, and improve" (Awasthi et al., 2005, p. 606). Aside from the provision of clinical services to patients, academic centers have a mission of providing the education of the medical students, and of training the next generation of physicians, residents, and fellows. In addition, academic centers provide the varying degrees of logistic, financial, and infrastructure support for clinical, educational, and basic science research in support of advancing the science of medicine.

Leadership positions in academic medicine can be at the division level (such as program director or division chief), departmental level (such as chairperson or vice chair), or organizational level (dean, vice dean, associate or assistant dean). Leadership positions at the hospital level can be at the level of work or business units, or clinical care centers. Those leadership roles are not captured in the Association of American Medical Colleges (AAMC) report on academic leadership. Leadership trajectories in academic medicine do not follow a single model. However, leaders in the academic setting are expected to be experts in their field and to be recognized as such by peers (Machado-Taylor & White, 2014). Academic recognition, in turn, is contingent on publications and research productivity, on participation in national and international meetings, on name recognition and field expertise. Academic leaders are also expected to identify, recruit, and support budding talents in the academic arena. Furthermore, academic leadership is associated with administrative responsibilities that may be foreign to the medical training. It has been suggested that it would be difficult, if not "impossible," to maintain simultaneous competency in all aspects of academic medicine (Awasthi et al., 2005).

Navigating these new roles can be daunting to the poorly prepared academician and can induce faculty members to falsely believe it is beyond their reach because they don't have what it takes.

Despite the progress made over the past decade, women in academic medicine are less likely to have advanced academic leadership positions at levels of chair or dean (Fried et al., 1996; Lautenberger, 2014), and their career development still falls short of that of their male counterparts (Bickel, 2014; Fried et al., 1996). Women's underrepresentation in senior academic positions has been noted since the late '80s (Bickel, 1988). At that time, the gender gap was attributed to a pipeline issue. It was suggested that women's representation in academic medicine reflected the previous decades, when fewer women graduated from medical schools (Nickerson, Bennett, Estes, & Shea, 1990). More recently, 46% of medical students in schools across the United States are women (Lautenberger, 2014). However, after graduating and completing their training, fewer women are choosing to remain in academic medicine, with women representing 38% of all full-time faculty in academic medicine (Lautenberger, 2014). Over the past decade, there has been a modest increase in the representation of women across most leadership strata, ranging from 5 to 9 percentage points (Lautenberger, 2014). According to a recent report of the AAMC, women constitute 21% of full-time professors, and only 16% of medical school deans are women (Lautenberger, 2014). Similarly, 15% of overall academic department chairs are women (Lautenberger, 2014). This gender gap is more prevalent in subspecialties that have traditionally been male-dominated, such as surgery and radiology (Lautenberger, 2014). For example, across academic centers in the United States, there are 294 surgery department chairs, of which only 3 are women, roughly 1% (Lautenberger, 2014).

It is recognized that women face "disproportionately" bigger challenges in the course of their careers in academic medicine, when compared to men (Awasthi et al., 2005; Bickel, 2014). Among those challenges are the availability of mentorship, learning

negotiation skills, the need to balance work and family life, and presence of gender biases in the workplace. Despite decades of knowing about these challenges to the advancement and promotion of women in academic medicine, some of those same challenges are still described and are still pertinent. A survey of women faculty in one large academic center in 1992 revealed that around 50% of respondents felt that promotions were biased and that they didn't have the same opportunities for professional development as their male counterparts (Bennett & Nickerson, 1992). Also, a large majority of the respondents "experienced conflicts between their professional and personal lives" (p. 115). A decade later, department chairs, interviewed for the 2001 AAMC report, attributed lack of women in leadership positions to factors such as presence of gender biases, absence of effective mentoring, and the need for a work/life balance (Bickel et al., 2002). Specifically, women chairs reported the gender-based challenges they have personally experienced as leaders (Bickel et al., 2002).

In the absence of appropriate mentoring and "appealing role models" (Carnes, Morrissey, & Geller, 2008), women are less likely to explore opportunities, less likely to expand their "social capital," (Bickel et al., 2002, p. 1047) and more likely to remain stagnant, in their comfort zone (Fried et al., 1996). The absence of women in advanced leadership positions means there are fewer women available as role models or as mentors (Ely, Ibarra, & Kolb, 2011). In addition, dependent care is more likely to force women rather than men away from a full-time practice (Lautenberger, 2014), thereby decreasing women's eligibility for promotion and a leadership position. In categorizing these challenges, the researcher used a conceptual framework previously described in the context of women and political activism (Costantini, 1990). Surveys of women identified as political activists were conducted every 4 years, over 20 years, in California between the years 1964 and 1986 (Costantini, 1990). Although the report focused on the motivational factors underlying women's participation in politics, the author recognized the other factors that facilitated and hindered women's paths to leadership positions.

Those factors were grouped in four categories: environmental, structural, situational, and motivational (Costantini, 1990). These explanations can be extrapolated to describe the challenges faced by women in academic medicine. Environmental conditions describe the work environment's acceptance and general support of women in leadership positions, including the presence of gender biases. Structural factors refer to the organizational infrastructure needed to achieve advanced leadership positions. Such factors could include availability of mentoring, role modeling, training and workshops, and other resources. Situational factors relate to the need to balance family and career, and to the presence of supportive social and family networks. Finally, motivational factors can explain the presence or lack of women's interest in pursuing or achieving leadership positions.

Little is known about women's perspectives toward leadership positions, and about their interest in pursuing these positions. In a recent survey by Bain & Company of 1000 men and women from several US companies, new employees reported similar job aspirations and confidence in their abilities, regardless of gender (Coffman & Neuenfeldt, 2014). However, after the first two years of their careers, fewer women maintained their ambition and their confidence in their suitability for leadership positions, and more women reported an apprehension of what this kind of success would entail. Anna Fels (2004), a psychiatrist interested in the development and psychological underpinnings of ambition in women, conducted a series of discussions with women from different backgrounds regarding their ambitions. The author concluded that early ambition in women is stifled by lack of affirmation and by gender role expectations. In her report, Fels remarked that women "conclude that their goals aren't rewarding enough to justify the effort required to reach them" (p. 8). A similar outlook is gleaned in academics. Focus groups were conducted with 27 "senior women faculty," with and without leadership roles, across several departments of a major US university to explore the "root causes for underrepresentation of women in leadership positions" within that university (Dominici,

Fried, & Zeger, 2009, p. 25). One of the themes that emerged from that study was that leadership positions seemed less attractive to the participants because of their perception that "academic leaders are expected to be available at work any time" (p. 26). Also, the participants felt that the transactional and hierarchical leadership styles in practice in their workplace were not congruent with their own views about leadership. In addition, participants felt that women encountered more blocks on their paths to leadership and that when women achieved leadership, they were less likely than men to receive recognition. Similar challenges and perceptions can prevent women from seeking and achieving leadership positions in academic medicine or could lead them to leave the academic arena altogether (Levine, Lin, Kern, Wright, & Carrese, 2011).

An earlier report of the AAMC identifies that increasing women in leadership as "the right thing to do" and also as "the smart thing to do" (Bickel et al., 2002, p. 1045). Increasing women's representation is considered an advantageous business decision, with positive financial repercussions for the institution (Bickel et al., 2002). Reports from the business sector suggest that companies with increased women representation in leadership positions have improved productivity and increased growth (Barta, Kleiner, & Neumann, 2012; Knight, 2014). Similar gains could be expected in medical institutions with increased women leaders (McDonagh, Bobrowski, Hoss, Paris, & Schulte, 2014). Also, women's approach to leadership could foster a change in the environment and in the culture of the workplace, potentially benefiting women faculty and enriching the workplace by incorporating different outlooks (Hoyt & Murphy, 2016; McDonagh et al., 2014). For example, it has been reported that women in leadership roles tend to favor a softer approach to leadership (Eagly & Carli, 2007). Women are more likely to focus on style, skills, staff, and shared goals, rather than on systems, structure, and strategy (Machado-Taylor & White, 2014; Watson, 1983), suggestive of a collaborative and transformative leadership style (Dominici et al., 2009; McDonagh et al., 2014). Increasing women's representation in leadership positions could potentially create a

positive feedback loop if it results in increasing women's commitment to leadership and academics, in providing role models and mentors, in influencing the workplace environment, and in incorporating new ideas to help physicians establish a work-life balance.

Problem Statement

Fewer women than men are in advanced leadership positions in academic medicine (Lautenberger, 2014). Several reports identify the presence of challenges to leadership and career advancement of women in academic medicine. The challenges facing women who are seeking leadership in academic medicine can be associated with the work environment (Arrizabalaga, Abellana, Vinas, Merino, & Ascaso, 2014; Elliott & Smith, 2004), the organizational structure (Eagly & Carli, 2007), the person's life situation (Levinson, Tolle, & Lewis, 1989), or a confluence of factors (Lautenberger, 2014). Also, little is known about women faculty's motivations regarding leadership, their interest in seeking a leadership position, or their perceptions of leadership roles and of effective leaders in academic medicine. Similarly, how and what women learn as they seek and engage in leadership roles is not sufficiently understood.

Lack of representation of women in leadership positions within academic medicine may be related to a confluence of environmental, structural, situational, and motivational factors, as previously discussed. In addition, women faculty's perceptions of leadership roles, of characteristics of effective leaders in academic medicine, and their own capacity for leadership in the context of academic medicine have not been described. These perceptions can, in turn, affect their interest or disinterest in leadership, and in seeking a leadership position. Finally, the learning required for or resulting from pursuing or attaining a leadership role has not been explored.

In an attempt to describe and qualify women's under-representation in leadership positions, several metaphors have been used: glass ceiling (Carnes et al., 2008; Nickerson et al., 1990; Zhuge, Kaufman, Simeone, Chen, & Velazquez, 2011), sticky floor (Tesch, Wood, Helwig, & Nattinger, 1995), glass cliff (Bruckmuller & Branscombe, 2011), and leadership labyrinth (Eagly & Carli, 2007). These metaphors imply or assume deliberate and planned trajectories that aim for leadership as a goal, but are falling short of achieving that goal. This perceived failure of attaining the upper echelons of leadership has been traditionally attributed to the situational, environmental, or structural experiences that can influence the paths to leadership for women. The influence of these challenges on women's careers can be significant, particularly if further compounded by women's lack of interest in the practice of leadership within their institution. Women's perceptions of leadership roles and of their own self-efficacy toward leadership have not been researched, nor has the learning leading to or resulting from these roles. These perceptions and learning can influence their trajectories and their career plans. Another deterrent to women's engagement in leadership trajectories is the potential misalignment between their perceptions of the practiced leadership styles in academic medicine on one hand, and their perceptions of what constitutes an effective leadership style on the other hand (Dominici et al., 2009). Finally, women's specific career paths and whether they are or aren't involved in leadership roles within the institution can influence their perceptions about leadership roles and the challenges encountered. Women who are in leadership can provide insights into how they learned to navigate the "labyrinth" and to overcome the challenges and what they learned from the process.

Academic institutions, in an attempt to increase women's leadership roles, support general faculty development programs, strive to provide formal and informal mentorship, promote the establishment and the work of societies of women faculty, and provide faculty with workshops and seminars to help develop the required skills. The success of those institutional initiatives is multifactorial, including the quality of the design and

implementation of the programs, their accessibility by faculty and their relevance to their practice. A better understanding of the specific challenges women have experienced during their career in academic medicine within the institution, of their perceptions about leadership positions, and of their interest or lack thereof in leadership positions can potentially help inform the design of more effective faculty development programs.

Purpose of the Study

The aim of this research was to explore the perceptions of full-time women faculty at one large urban academic medical center regarding leadership trajectories within academic medicine, comparing those who are and those who are not in institutionally defined leadership roles. The purpose of this qualitative case study was to explore participants' perceptions of the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, how they learned to navigate the challenges, and what they learned in the process. Such understanding and insights contributed to the researcher's development of recommendations for the professional development of women seeking leadership positions as well as for women in academic medicine who may become interested in such roles.

Research Questions

This study was designed around the following questions:

1. What characteristics do women describe as exhibited in leaders in academic medicine? What characteristics do they believe should be exhibited by effective leaders in academic medicine?
2. How do participants describe their own capacity for leadership?

3. What do participants perceive as the facilitators and the barriers to seeking and achieving a leadership position in academic medicine?
4. a. How did women who are in leadership positions learn to navigate their path to leadership? What did the participants learn in the process?
   b. Why have women who are not in leadership positions chosen not to pursue this path?

Approach

This research is a case study using qualitative methods to explore the perceptions of full-time women faculty toward leadership. This case study was conducted at a single large urban academic center. Interviews were conducted with 27 full-time women faculty: of those, 14 women hold institutionally defined academic leadership positions consistent with the AAMC report, 6 women hold hospital, non-academic leadership positions, and 7 are not in leadership positions. In addition to their experience with leadership, participants were approached based on the numbers of years as faculty since finishing residency and based on their specialty training. Semi-structured in-depth interviews were conducted on site with the participants to explore their perceptions of leadership positions, their self-efficacy toward leadership, their perceptions about motivators, facilitators, challenges, and barriers to leadership, and their learning from the process and from their experiences.

Assumptions and the Researcher

The researcher is a full-time physician, with an interest in education and faculty development. As a woman physician considering her own career path, she has personally experienced or observed structural and environmental challenges to leadership in

academic medicine. The researcher held several assumptions relevant to this study, based on previous personal experiences and on informal conversations with colleagues. First, women in academic medicine may view leadership positions as mostly an administrative burden that would detract from clinical work and from family life. Second, there are conscious and unconscious gender biases held by men and women in academic medicine that have the potential to affect women's careers. Third, women are less likely to believe in their self-efficacy to hold institutionally defined advanced leadership positions in academic medicine. Fourth, women are able to learn to overcome those challenges and can learn from the process of seeking and holding a leadership role. Fifth, academic institutions can foster leadership trajectories by recognizing and addressing perceived challenges to leadership positions for their women faculty, as well as by providing opportunities for the learning needed to navigate those challenges. Finally, the researcher assumed that women would engage meaningfully with the research questions and that they would honestly and candidly report their experiences and share their learning with the researcher.

Rationale and Significance

The research was designed to help provide insights about women's perceptions toward leadership positions, and toward the challenges, facilitators, motivators, and detractors that women may experience during their career trajectories within academic medicine. Furthermore, it can give insights about women's learning from the process of navigating those challenges and in having a leadership position. It was anticipated that such understanding and insights would contribute to the researcher's development of recommendations for the professional development of women seeking leadership positions as well as for women in academic medicine who seek to advance into such roles.

The absence of women in advanced leadership roles deprives junior faculty from valuable role models and the organization from a potentially different leadership style and outlook. Faculty development programs aimed at improving women's skills, providing mentorship, and improving the environment's acceptance of and support for women can be costly financially and require personnel and time for deployment. Faculty development programs are more likely to be effective when designed based on women's needs, perceived challenges, potential motivators, past experiences, and preferred learning rather than assumptions made by the administration. Exploring women's perspectives, their learning about leadership positions and about effective leadership helped the researcher formulate recommendations for organizations to create more efficacious faculty development programs, to address the perceived challenges to and drawbacks of leadership, as well as the necessary learning and strategies helpful to advance into such positions.

Chapter II

LITERATURE REVIEW

Introduction

After situating the problem and the purpose of this research in Chapter I, this chapter will review the available and relevant literature to achieve a better understanding of the problem and to frame the study in the context of recent research. The literature reviewed covers three topics: (1) overview of leadership theories (including a discussion of similarities and contrasts between leadership in the business and academic worlds); (2) review of reported challenges to leadership in academic medicine (including environmental, structural, situational and motivational factors); and (3) discussion of how leaders learn through the lens of adult learning theories (specifically informal and experiential learning and social cognitive theories). A literature search, covering the past 10 years, was performed using Google Scholar and the electronic databases of Columbia University and Teachers College, namely, CLIO, Digital Dissertations, ERIC, Library of Congress, JSTOR, PubMed, PsycINFO, ProQuest, and Web of Science. Relevant and included material consisted of peer-reviewed articles, books and book chapters, newspaper and magazine articles, published dissertations, and other electronic resources. Additional references were also identified from the reviewed material. Keywords used in the search included a variation and a combination of “women,” “gender,” “mentor,” “leadership,” “academic medicine,” “adult learning theory,” “informal,” “self-directed,” “tacit,” “incidental,” “experiential,” “learning from experience,” “learning paths,”

"communities of practice," "reflection," "self-authoring," "self-efficacy," "learning orientation," "motivation," and "social cognitive theory." The reviewed literature helped frame the research questions and assisted in providing clarity to the conceptual framework used for the design of the research methods, as well as during the data collection and analysis phases of this study.

Topic One—Leadership

Leadership within an organization is often associated with setting a vision, communicating effectively, motivating others to work toward that vision, and enforcing the principles of the organization (Crevani, Lindgren, & Packendorff, 2010). Leadership studies have shifted their focus over the past decades from a leader-centered exploration to a group-focused process (Crevani et al., 2010). Our understanding of leadership has shifted as well from a personality-based approach to a transformative and servant-based outlook. Accordingly, and over the years, the focus of leadership studies has evolved along increasingly wider concentric circles, with the leader at the center, albeit with modified roles. Leadership studies traditionally focused on the individual leader's personality characteristics. This narrow focus expanded to include the behavior of the leaders toward other team members and the interactions between leaders and followers, and how these interactions were affected by different situations. More recent views place leadership in the group as a "collective" activity, rather than in the hands of a "formal leader" (Crevani et al., 2010, p. 79). The shift in focus from the individual leader's "intrapersonal" attributes to the "interpersonal" "processes, practices and interactions" of leadership (Crevani et al., 2010; Day, Fleenor, Atwater, Sturm, & McKee, 2014) can result in dissociation between leadership practice and leadership positions. For example, demonstration of transformational leadership traits was not associated with increased likelihood of being promoted into a position of leadership (Knight, 2014). Similarly,

members of an organization can efficiently exercise leadership roles without the administrative recognition or leadership title (Blumenthal, Bernard, Bohnen, & Bohmer, 2012). The ontologic shift in defining and studying leadership may ultimately affect our understanding of what constitutes leadership (Crevani et al., 2010). Rather than being seen as innate or a set of observable behaviors, leadership can be explored from a constructivist lens as a concept defined by the followers, the stakeholders, and by the organization (Liu, 2010). In this constructivist approach, gender issues, which will be discussed later in this chapter, may exert a prominent influence in describing the expected behavior of leaders since "in most cultures there are areas of behavior in which one person of one sex can prescribe behavior for members of opposite sex" (Raven & French, 1958, p. 401).

Our understanding of what leadership looks like is sometimes taken for granted (Crevani et al., 2010) and is influenced by the environment of the organization. The leader's role is seen in relation to the goal and vision of the organization. Leaders can formulate a clear vision, communicate that vision effectively, generate support for it, and help develop future leaders in the field (Blumenthal et al., 2012). This perspective on the leadership role is often in contrast with our view on the management role. Managerial tasks relate to setting goals and achieving them, recruiting personnel, designing plans of action, and promptly responding to problems (Blumenthal et al., 2012). However, this distinction between the visionary leader and the organized manager is frequently artificial, and the roles may represent different ends of a spectrum (Blumenthal et al., 2012).

This review will explore the literature on leadership and leadership theory by discussing the differences, the intersection, and the interdependence of the roles of a leader as manager of self, as manager of tasks, and as manager of people. The researcher acknowledges that while such division is artificial, it provides a useful conceptual

framework for exploring leadership theories. In particular, the intricate interdependence of the roles of the leader as a manager of tasks and as a manager of people is recognized.

Leader as Manager of Self

Early leadership studies focused on the elements of personality of the effective and successful leader (Gregoire & Arendt, 2014). The trait theory of leadership is based on the assumptions that all successful leaders possess inborn, innate traits (Stogdill, 1948). If present in the right combination and in the right intensity, those traits would then predict a successful leadership (Stogdill, 1948). From these early perspectives emerged the "Big Five" trait model, characterizing leadership traits into five main categories: extraversion, conscientiousness, agreeableness, emotional adjustment, and openness to experience (Gregoire & Arendt, 2014; Liu, 2010). In this model, extraversion includes traits such as energy, assertiveness, and being outgoing; conscientiousness, the personality trait that correlates the most with job success (Judge & Bono, 2000), relates to integrity, dependability, and a need for achievement; agreeableness includes optimism, helpfulness, and affiliation; adjustment refers to traits such as self-control, emotional stability, and self-esteem; and intelligence describes traits such as inquisitiveness, open-mindedness, and openness to learning (Gregoire & Arendt, 2014). Although personality trait theory has informed subsequent studies in leadership, it fails to explain why some leaders aren't successful in their positions despite having the necessary traits. Moreover, when mistakes happen, it is the moral integrity and personal characteristics of the leaders that are often scrutinized (Liu, 2010). Mintzberg (1971) conducted "structured observations" of chief executives in five medium- to large-size organizations from different industries, over one week each. Analysis of the observations allowed the author to draw several inferences related to the role of executives and their "ability to administer a complex organization" (Mintzberg, 1971, p. B99). From these observations emerged several characteristics of effective leaders: ability to deal with a large workload at a fast

pace, favoring focused, precise communications, acting as an interface between the different sections of an organization, and preferring verbal media. Also, effective leaders "appeared to control" their "affairs," deciding on the tasks to which they commit their time and making the most out of imposed situations (Mintzberg, 1971, p. B101).

In addition to their ability for self-control, effective leaders are generally self-confident. Self-efficacy, or the personal belief that one has the ability to perform a specific task or achieve a given goal, can affect leadership performance (Bandura, 2010; McCormick, 2001). Unlike self-confidence, which is a personality trait, self-efficacy is described as a personal belief that is shaped by personal and observed experiences, and is modulated by feedback and by physiologic well-being (Bandura, 1998; McCormick, 2001). Self-efficacious individuals are described in similar terms to successful leaders, as "motivated, persistent, goal-directed, resilient, and clear thinkers under pressure" (McCormick, 2001, p. 36). Self-efficacy, in turn, influences how individuals approach tasks, which goals they choose, and how they handle challenges and manage tasks (Maurer, 2001; McCormick, 2001).

Leader as Manager of Tasks

Beyond managing self, an effective leader successfully manages tasks, navigating challenges, and achieving desired goals. Starting in the 1950s, behavioral sciences provided the framework for exploring leadership as the behaviors exhibited by leaders, both in their interactions with other individuals and in their approaches to tasks (Gregoire & Arendt, 2014). This shifted the interest from the leader's personal characteristics to the "leadership process" (Blake & Mouton, 1982, p. 20). In this paradigm, leadership is considered a learned process rather than an innate characteristic: time and effort are needed to develop the necessary skill set and to learn the appropriate, and expected, behavior in the management of tasks and people (Shore, Rahman, & Tilley, 2014). In addition to the skills, traits, and behaviors of the leaders, the elements of the situation in

which leadership is exerted and the characteristics of the subordinates can influence the effectiveness of the leader (Gregoire & Arendt, 2014). Different theories explore the interplay between the leader's styles, the context of the situation, the nature of the task, and the subordinate's characteristics. Fiedler argues that different situations require different leadership skills (Blake & Mouton, 1982). The premise of Fiedler's contingency model, however, supposes that the individual's dominant leadership style is fixed. Accordingly, as situations and tasks change, the leaders may need to be replaced to maintain an effective leadership environment within the organization. Their leadership style makes them best suited for specific situations. For successful performance of the group, alignment of style and situation should be sought, instead of attempting the development of alternative styles in the leader. Hersey and Blanchard postulate that, in fact, different leadership styles are needed for different subordinates with different levels of maturity (Blake & Mouton, 1982). In contrast, the Blake and Mouton model supports the concept of "one most effective leadership style," regardless of subordinate maturation level (p. 22). Basing their work on behavioral studies of leaders, Blake and Mouton offered the two-dimensional managerial grid, which describes the interplay of the leader's concern with tasks and his or her concern about people, and from which different leadership styles can emerge (Blake & Mouton, 1982; Blake, Mouton, Barnes, & Greiner, 1964; Gregoire & Arendt, 2014). The authors argue that the use of a managerial grid could lead to increased productivity and to improved employee satisfaction (Blake & Mouton, 1982). As Blake and Mouton suggest, "the exercise of leadership involves a task to be accomplished and people to do it" (p. 24). Accordingly, there is an inevitable interdependence between how leaders approach tasks and how they manage people (Blake & Mouton, 1982), and the analysis of one aspect without the other is incomplete and can lead to inaccurate inferences. It is the interpersonal aspect of leadership that is suggested to be related to "leadership capacity," or effectiveness (Day et al., 2014, p. 63).

Leader as Manager of People

In evaluating leadership styles in relation to tasks, people, and situations, Blake and Mouton (1982) offer a summary of what is considered "effective leadership":

> The effort to achieve production with and through others is premised upon participation to gain involvement, earned commitment, mutual goal setting, creativity, two-way communication, candor, mutual trust and respect, and the resolution of differences through confrontation at *all* maturity levels. This is the most effective style of exercising leadership; what changes with the situation is the tactics of its application. (p. 26)

This hypothesis of "one most effective leadership style" echoes and expands the theories advanced by Argyris, Likert, and McGregor (Blake & Mouton, 1982; Curtis, 2002; MacGregor, 1960) and intersects with Lewin's (1944) leadership styles. Argyris links the individual's development from immaturity to maturity with the leadership's practices, which are most effective when the organization allows individuals to make creative contributions (Curtis, 2002). Similarly, Likert reported that effective leaders were more likely to be focused on the "human aspect of their employees' problems" (Curtis, 2002, p. 31). McGregor (1960) suggests that the behavior of subordinates is linked to the fulfillment of their higher needs for safety, community, independence, and status. Leaders should help foster the work environment that motivates workers to seek those higher needs. Consequently, McGregor proposes Theory Y as a set of views to harness the "creative human energy" (p. 166), viewed by many as the best style of leadership (Blake & Mouton, 1982). In this view, the "essential task of management is to arrange organizational conditions and methods of operation so that people can achieve their own goals best by directing their own efforts toward organizational objectives" (MacGregor, 1960, p. 12). The styles employed by the leader can be "autocracy, democracy or individualistic freedom (laissez-faire)" (Lewin, 1944, p. 397). A democratic leader creates an environment where individuals are guided by their own motivations and not by the power of authority (Lewin, 1944). According to Lewin, these leadership styles are not on a linear spectrum of behavior; instead, they should be perceived as a triangle. This

triangular arrangement ensures that a democratic leader is not viewed as less "powerful" than an autocratic leader on a continuum between autocracy and laissez-faire, but rather as possessing "honest and deep differences" (p. 196). To achieve democratic leadership, both followers and leaders are educated in their role and responsibilities toward other group members (Lewin, 1944), thereby setting the stage for group dynamics.

Building on Lewin's leadership styles, French and Raven (1959) explored the sources of power that leaders exert over peers and subordinates. In their theory, power is defined as the ability to effect change in "behaviors, opinions, attitudes, goals, needs, values and all other aspects of the person's psychological field" (French, Raven, & Cartwright, 1959, p. 150). The basis of power can be the result of the position of leadership, such as legitimate, reward, coercive, information, and ecological powers, or the result of personal characteristics, such as expert and referent powers (French et al., 1959; Gregoire & Arendt, 2014). In this view, legitimate power implies a social understanding that the leader has the "legitimate right" to influence another person, who in turn has an "obligation to accept this influence" (Raven & French, 1958, p. 400). Individuals are more likely to accept the legitimacy of an elected rather than an assigned leader, whether they voted for that leader or not (Raven & French, 1958). This hypothesis was supported by an experiment in which 56 female undergraduates, who volunteered to participate in a two-hour workshop, voted for a supervisor. The results of the votes were prearranged in favor of the researchers' collaborators. The participants were then separated and assigned to one of two groups. Members of the support group received regular visits and directions from the "elected" supervisor, while members of the no-support group received visits from a collaborator who gave "plausible excuses" of why she took over the position of supervisor from the previously "elected" member. At the conclusion of the experiment, participants in the support group were more likely to view the "elected" supervisor as legitimate and were more likely to follow her directions, compared to those in the non-support group (Raven & French, 1958).

Influence on peers, subordinates, or superiors, however, can be exerted by a variety of tactics and strategies, regardless of power status (Gregoire & Arendt, 2014) or leadership role. This influence is the result of a focus on the interpersonal interactions between the leader and their followers, rather than on relying on legitimate or coercive power (Bass, 1990). The social leader maintains strong relationships with their team members and demonstrates concern for them, thereby shifting the focus to the context of leadership (Knight, 2014). Transactional and transformational leaderships, merged in the Full-Range of leadership, place the focus on the interaction between the leader and their followers (Gregoire & Arendt, 2014). In a transactional leadership model, the leader is task- and outcome-oriented, using behavioral enforcement such as rewards and punishments to get the job done (Bass, 1990; Gregoire & Arendt, 2014). The expectations of the leader and the reward promised to the subordinates are explained (Bass, 1990). This approach combines the task-oriented approach with the "consideration for employees" by rewarding good performance and penalizing bad performance (Bass, 1990, p. 20). However, this approach to leadership can be fraught with pitfalls. As Bass describes, a purely transactional style is a "prescription for mediocrity," prompting the leader to assume a passive attitude alternating with enforcement of "counterproductive" "disciplinary threats" (pp. 20-21). The ineffectiveness of this style becomes especially clear in organizations where the rewards and punishments may be beyond the control of the leader (Bass, 1990). Transformational leaders, on the other hand, motivate the employee to work toward the common goals by using "intellectual stimulation, inspirational motivation, idealized influence, and individualized consideration" (Gregoire & Arendt, 2014, p. S15). As Bass (1990) described,

> Superior leadership performance—transformational leadership—occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they stir their employees to look beyond their own self-interest for the good of the group. (p. 21)

A transformational leader is primarily a charismatic leader who leads not by their position, but by their personality and their vision (Judge & Bono, 2000). The transformational leader is also a visionary and a great communicator who can provide inspiration to his or her followers (Judge & Bono, 2000) and who can, when needed, reframe his or her mistakes to "construct" a more positive image of themselves and their team (Liu, 2010). The transformational leader supports the needs of his or her followers while inspiring them to seek creative solutions to problems and to "challenge the status quo" (Judge & Bono, 2000, p. 751). Because the leader's charisma is a recognized important facet of transformational leadership, there is a debate whether transformational leadership is a learned behavior or an innate personality trait (Judge & Bono, 2000). The association between transformational leadership and the big five personality traits was investigated in a group of over 300 leaders from various industries, matriculated in different leadership programs across the Midwest. The study utilized self-assessment questionnaires as well as subordinate-filled surveys, using validated instruments for exploring transformational leadership behavior, personality traits, and subordinate job satisfaction (Judge & Bono, 2000). While transformational leadership can be a learned behavior, it is positively associated with specific personality traits, such as agreeableness (Judge & Bono, 2000). More interestingly, subordinates who rated their leaders as transformational were more likely to report more satisfaction with their leaders, their jobs, and overall increased commitment to their organization (Judge & Bono, 2000).

In the past few decades, ethical concerns and widespread media coverage of business decisions have propelled the concept of authentic leadership, where leaders are motivated by their internal moral and ethical principles and engage in their leadership position to advance values and ideas for society as a whole, and not to advance their status or their careers (Liu, 2010; Nonaka & Takeuchi, 2011; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). Authentic leadership can be described by four core concepts: self-awareness, relational transparency, balanced processing, and

internalized moral perspective (Hirst, Walumbwa, Aryee, Butarbutar, & Chen, 2016; Walumbwa et al., 2008). Self-awareness refers to the ability of the leader to identify his or her own strengths and weaknesses, and how these can affect others. Relational transparency refers to the willingness of the leader to display their true self to others. Balanced processing refers to the leaders' ability to incorporate information from different sources, even if at odds with their own opinions. Internalized moral perspective refers to how leaders are guided by their internal rather than social and organizational moral values (Hirst et al., 2016; Walumbwa et al., 2008). A transformational leader supports the development of their followers into leaders, while an authentic leader fosters the development of followers "toward achieving authenticity, which may or may not involve serving in a leadership role" (Walumbwa et al., 2008). In addition, leadership can be viewed either as a position of power or as a position for empowerment (Denmark, Goldstein, Thies, & Tworecke, 2015). While both may coexist, most leaders will not demonstrate both capacities within their group at all times (Denmark et al., 2015). Empowering leaders can help build others' self-esteem and promote their personal growth by providing support, guidance, and mentorship (Denmark et al., 2015).

Greenleaf (1977) describes in his model of servant leadership that the first impulse is to serve, and then the aspiration to lead follows. In this model, the servant leader's priority is the personal growth of the followers, the development of their capacity to serve, and the care for the "least privileged" in society or in the organization (p. 6). In the public and service sectors, leadership is concerned with identifying the organizational goals and optimizing interpersonal influence in order to set the purpose and direction and provide the motivation to achieve those goals (Horvath et al., 1999). This orientation is exemplified in academic medicine and in the military.

Leadership in Academic Medicine

Whereas leaders and executives in the business world are under the intense scrutiny of the media, the market, and the shareholders (Liu, 2010), leaders in academic medicine have a hierarchical accountability within their institution and compliance responsibilities with accrediting organizations, but they are usually shielded from direct public inquiry. This distinction may explain the difference in outcomes, successes, and failures of leaders in both sectors. Outcomes for leaders in business are quantifiable and are often related to the fiscal performance of the organization (Liu, 2010). In contrast, outcomes for leaders in academic medicine can be related to engagement of faculty and trainees, leading to improved retention and hiring rates, to improved productivity such as research activity, publications, and successful grant funding, and to trainees' academic success and future career placement (Buller, 2013).

It has been postulated that, in academic medicine, distinct cognitive skills and competencies are required for leadership roles and clinical roles (Blumenthal et al., 2012). Leadership in the military provides a similar guiding framework that delineates the knowledge and competencies a leader should possess: what a leader should know and what a leader should be able to do (Horvath et al., 1999). A leader should know about "standards [of practice], oneself, human nature, one's job and one's unit" (Horvath et al., 1999, p. 43). A leader in the military should possess nine leadership competencies, developed and described in the 1970s, which include communications, supervision, teaching and counseling, decision making, team development, technical and tactical proficiency, planning, use of available systems, and professional ethics (Horvath et al., 1999). However, leadership training is not part of the usual physician training and is not included in medical school curricula (Blumenthal et al., 2012). Instead, physicians develop leadership skills on the job or by engaging in separate leadership or management programs (Blumenthal et al., 2012). A leader in academics in general and in academic medicine in particular faces the additional challenge of leading a group of peers, with

varying degrees of expertise and who are evidence-seeking critical thinkers (Shanafelt & Noseworthy, 2017).

Clinical leadership skills could improve patient outcomes and allow for better team performance (Blumenthal et al., 2012). This in turn results in staff retention, decreased burnout, and improved job satisfaction (Blumenthal et al., 2012). However, physicians may worry that leadership roles can distract from providing dedicated clinical and educational work (Blumenthal et al., 2012). In addition, the career focus can influence the career path: a career in research is more likely to lead to academic leadership, compared to the clinical or educator track (Carnes et al., 2008).

Summary

In this section, different leadership theories were reviewed within a framework for leaders as managers of self, of tasks, and of people. Leadership theories were explored, emphasizing different facets of effective leadership characteristics. Over the past several decades, leadership theories have offered different interpretations of what constitutes effective leadership. The nature of leadership (innate personality traits or a set of observable and learned behavior), its focus (managing tasks and productivity or managing people and motivation), its context (contingency, situational, or power driven), and its implications (transformational, servant or authentic) provide complementary interpretation of the role of the leader in an organization. The contrasts and similarities between leadership in the academic and business world were discussed.

In addition, women are under-represented at leadership levels in academic medicine and in the business world (Ely et al., 2011). What follows is a discussion of the various factors that may contribute to this under-representation.

Topic Two—Challenges on the Leadership Track

The Association of American Medical Colleges (AAMC) has recognized the paucity of women in leadership positions since the mid-'90s (Bickel et al., 2002). This was originally attributed to a pipeline issue, suggesting that as women's matriculation and graduation from medical school increased, so would their representation in academic leadership positions (Nickerson et al., 1990). However, the increased representation of women in medical schools and residency that occurred over the past few decades was not followed by an increased representation of women in positions of academic leadership (Bickel et al., 2002; Carnes et al., 2008; Lautenberger, 2014). The most recent AAMC report indicates that only 16% of deans and 15% of department chairs are women (Lautenberger, 2014). This underrepresentation of women in academic leadership positions could be explained by the persistent presence of a glass ceiling to women's career advancement. The "glass ceiling" metaphor was introduced in 1986 by the *Wall Street Journal*, referring to the barriers women encounter in advancing in the corporate world (Hymowitz & Schellhardt, 1986). It was used to describe a visible and close goal that remained out of the reach of women in the business world. This can be interpreted either as an absolute barrier above which women don't progress, or as a relative disadvantage relative to men in reaching higher levels of power and leadership (Elliott & Smith, 2004). It is believed that increasing women's representation in the C-suite results in increased creativity and increased productivity, thus benefiting the organization and its stakeholders (Bickel et al., 2002; Hoyt & Murphy, 2016). In addition, diversity in the workplace is associated with increased "resilience" and "stability" (Bickel et al., 2002). Carnes et al. (2008) established a parallel between the "slow progress" of women's path toward leadership and the "advancement of women's health issues" (p. 1455), highlighting the social and public impact of the career paths of women in academic medicine (Hoyt & Murphy, 2016).

While the business world has recognized the importance of changing the organizational environment to promote women's advancement, academic medicine has been slow to recognize the problem and to initiate substantial and sustainable change (Bickel et al., 2002). Almost three decades later, the observations about the challenges faced by women remain true: prejudice at work about their capabilities, assumptions of their partial availability because of their family demands, and lack of "sponsors" or mentors to increase their visibility (Hymowitz & Schellhardt, 1986). The "glass ceiling" may persist in academic medicine because it is traditionally a hierarchical environment (Henderson et al., 2014), leading several authors to recognize the "disproportionately bigger challenges" women face during their careers (Bickel, 2014; Bickel et al., 2002; Fried et al., 1996; Lautenberger, 2014).

In the following section, these challenges will be explored using the previously described framework, which consists of four categories (Costantini, 1990). Environmental factors relate to the work environment and the cultural values in place. Structural factors relate to the infrastructure and resources offered by the organization. Situational factors reflect the responsibility to family and dependents. Motivational factors reflect presence or absence of interest in leadership positions.

Environment and Cultural Values

In an earlier AAMC report, environmental factors such as gender biases were suggested as having the biggest role in hindering women's progress and in undermining women leaders (Bickel et al., 2002). In a survey of 188 full-time tenured faculty in a large academic department, more than half the female respondents perceived the presence of gender-based challenges to women's advancement, compared to only 18% of the male respondents (Fried et al., 1996). Similarly, women chairs reported the gender-based challenges they had experienced as leaders (Bickel et al., 2002), highlighting the

importance of the role of the organization's environment in sustaining women's careers in leadership.

In addition to explicit gender biases, unconscious or implicit biases about the characteristics of leaders and about the respective attributes of men and women can influence women's career progression (Carnes et al., 2008; Girod et al., 2016; Hoyt & Murphy, 2016). These biases and preconceived notions can lead us to place generalizing labels on groups of people, with little attention to their own personal achievements and career paths. In a group of 280 faculty at a single large academic center, researchers explored the presence of explicit biases using a survey about participants' perceptions of bias and their explicit "attitudes toward gender and leadership" (Girod et al., 2016, p. 1146). In addition, they explored implicit gender biases by using a version of the Implicit Association Test to assess the strength of association between the two concepts of gender and leadership. The study's findings suggest that "both male faculty and older faculty have stronger implicit associations of leadership with men than with women, compared with respectively female and younger faculty" (p. 1146). Similar implicit gender biases were found to influence both female and male faculty's perceptions regarding the competence of a candidate, their deserved salary, and their willingness to mentor them (Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). One hundred twenty-seven science professors selected nationwide from six large "research-intensive" universities were asked to evaluate the same application package of a hypothetical undergraduate student, randomly assigned as male or female, applying for a science laboratory manager position (Moss-Racusin et al., 2012). Both female and male professors were less likely to hire female applicants, who were perceived as less competent than the identical male applicants. In addition, female applicants were offered a lower salary and less career mentoring. The average salaries offered to the female and male students were $25,500 and $31,000, respectively. It is worth noting that the

participants in that study were predominantly middle aged (mean age 50 years), White (81%), and male (74%) (Moss-Racusin et al., 2012).

The persistence of gender biases in academic institutions may indicate the presence of "cultural stereotypes" that place women at a disadvantage for career advancement (Moss-Racusin et al., 2012). Women may be perceived as a poor fit to the preconceived ideas of what a leadership role implies (Hoyt & Murphy, 2016). This could result in women experiencing a "stereotype threat," which is reinforced by the lack of women in leadership and could result in decreased leadership efficacy and engagement (Hoyt & Murphy, 2016). In addition, the academic performances of women and their eligibility for promotion are frequently judged by men and can thus be influenced by "homosocial reproduction," whereby people are more likely to engage and support individuals who are similar to them (Bickel et al., 2002). Similarly, "gatekeeping" is a concept that has been suggested as an explanation for the low number of women achieving public office, where men in positions of power exert their control to maintain the male dominance (Costantini, 1990). As a result of this gatekeeping, women may need to demonstrate higher qualifications than men to be considered for the same leadership positions (Groysberg & Bell, 2013; Shore et al., 2014). In addition, men in power may implicitly favor those who share similar characteristics, particularly their gender (Ely et al., 2011). This extends into networking circles, which women are less likely to join and where men implicitly support and mentor other men (Ely et al., 2011; Shore et al., 2014). The inequality in representation serves to perpetuate the system, preventing women from achieving leadership or even aspiring for such positions (Ely et al., 2011).

Social role theory suggests that an individual's behaviors reflect the stereotypes of their social role (Balachandra, Briggs, Eddleston, & Brush, 2013). Accordingly, it is expected that women will exhibit communal traits (dependent, nurturing, and submissive), while men will exhibit agentic traits (independent, action-oriented and strong) (Balachandra et al., 2013; Carnes et al., 2008). Women may thus be perceived as

weak, emotional, and indecisive, while men are perceived as strong, assertive, and responsible, all of which are considered leadership traits (Ely et al., 2011; Shore et al., 2014). When women entrepreneurs presented their pitch to a jury, reviewers found that those women who displayed feminine behaviors were less successful in their pitch evaluation than women who didn't (Balachandra et al., 2013). This may, in turn, lead women to believe they "don't have what it takes" or may result in employers overlooking the potential of their women employees (Ely et al., 2011; Shore et al., 2014).

Whereas leadership is traditionally associated with agentic masculine traits (Shore et al., 2014), women in positions of leadership who demonstrate the stereotypical male characteristics are judged harshly as too aggressive or confrontational (Bickel et al., 2002; Ely et al., 2011). This potentially forces women to juggle the balance between perceived competence and likeability at the workplace (Ely et al., 2011) in order to secure institutional support and to find the optimal resources for their career advancement.

Infrastructure and Resources

Eagly and Carlie (2007) propose that the metaphor of a glass ceiling is outdated and is not actually representative of the current state of affairs preventing women from achieving leadership positions. Instead, they use the "labyrinth" metaphor to describe the paths and obstacles along women's careers, implying that the goal is achievable, even if the path to it is not clear or direct. Others have suggested the alternate metaphor of "sticky floors" to describe the lack of institutional support for women's career advancement in academic medicine (Tesch et al., 1995). One of the challenges facing women in academic medicine is lack of mentoring. Aspiring to a leadership position is not sufficient for women to demonstrate the required leadership competencies (Dannels et al., 2008). Participation in formal leadership training programs (Dannels et al., 2008) or having access to established mentoring programs (Shore et al., 2014) can help translate aspirations to competencies and can help promote women's self-efficacy (Dannels et al.,

2008). Institutional support for faculty members can be informal through the presence of role models, can be facilitated through mentoring programs and peer groups, or can be formal through established societies and faculty development programs. Presence of role models in advanced leadership position can help inspire junior faculty in their career choices and improve their overall satisfaction (Levinson, Kaufman, Clark, & Tolle, 1991). Effective mentoring can help the mentee at the personal and professional levels. Mentoring can provide the balance of support and challenge that women need to pursue their aspirations, to expand their comfort zone, and to explore opportunities (Bickel et al., 2002), while providing them protection and exposure in the institution, expanding their social network and academic capital (Denmark et al., 2015). In particular, experienced mentors can help junior faculty understand and successfully navigate the organizational politics (Denmark et al., 2015). Such collaborative relationships can also result in increase in publications (Denmark et al., 2015), which are important for academic promotions. However, women are less likely to seek or engage in mentoring relationships when compared to men, and even when they do, the mentoring relationship is less likely to be successful (Bickel, 2014). Women are more likely than men to report that their mentors failed to promote their visibility and research opportunities (Fried et al., 1996). Visibility is increased by establishing a network of professional connections within the institution or at the national level and can lead to recognition and to increased opportunities. Women are less likely to invest the time and energy needed for establishing and maintaining those professional networks, fearing to be judged as manipulative or too aggressive (Ely et al., 2011). In 2001, fewer than 15% of medical schools had an established society for women faculty (Bickel et al., 2002). Such societies can provide peer networking, help women identify and connect with mentors, and help organize skill-building workshops. In addition, the authors of the AAMC report concluded that there is a lack of faculty development programs, and specifically, lack of leadership development programs (Bickel et al., 2002). Such faculty development

programs are most effective in retaining women and in advancing their academic careers when they are based on an assessment of women's needs (Bickel et al., 2002). However, designing effective leadership programs for women may be challenging (Ely et al., 2011). Business schools with established women-only leadership programs have either delivered their traditional programs to women or have tried to change women' perspectives on leadership and encourage them to embrace the usual masculine traits associated with leadership (Ely et al., 2011).

In addition to lack of mentoring and faculty development support, women have to overcome the institutional promotion guidelines that place a bigger weight on research, publications, and explicit recognition, rather than on "behind the scene" team building and group work, which women tend to favor (Bickel et al., 2002; Carnes et al., 2008; Ely et al., 2011). A career in research is more likely to lead to academic leadership (Carnes et al., 2008). This places women at a disadvantage, since there are fewer women in research positions and more on clinical and educator tracks. The non-research tracks, chosen or imposed, may help women avoid the demands of preparing, competing for, and obtaining large financial grants for research (Carnes et al., 2008).

On the other hand, it has been suggested that women are placed in positions of leadership when an organization is in crisis, to walk on the edge of a "glass cliff" (Bruckmuller & Branscombe, 2011). It is suggested that selecting women in times of uncertainty may be done by organizations in response to a perceived need for leadership change (Glass & Cook, 2016). In addition, because men have more career choices, they are more likely than women to turn down high-risk, albeit high-profile, career offers (Glass & Cook, 2016). Through 2014, 52 women had served as CEO of a Fortune 500 company. Forty-four percent of those women were appointed as CEO at times of high risk for the company, compared to 22% of men who were matched for company size and industry (Glass & Cook, 2016). Furthermore, the underlying turmoil, compounded by lack of influence and support, may increase the likelihood of women failing in their

leadership positions (Bruckmuller & Branscombe, 2011; Glass & Cook, 2016), thereby increasing the overall bias against women in leadership. This turmoil may in turn extend beyond the workplace, impinge on women's personal lives, and hinder the achievement of a work-life balance.

Work-Life Balance

The presence of a tension between work requirements and life demands is not unique to healthcare professionals or those in academia. Anleu and Mack (2016) reviewed the 2007 National Survey of Australian Judges and conducted 38 interviews with judicial officers to explore their experiences of "tensions between work and family" (p. 216). "Work dominance" emerged as a theme from the survey and interviews. Regardless of their gender, judges perceived work as "potentially and actually overwhelming other aspects of life" (p. 219), leading them to work longer hours and during weekends and holidays. Work was also perceived as "inflexible" because of rigid work hours and because of the expected tasks to be completed. This inflexibility precludes the possibility "to manage personal and family issues" during work hours (p. 221). In addition, the dominance and inflexibility of work demands are normalized for both men and women. However, compared to men, women are more likely to discuss the intrusion of work into their lives and the need for juggling strategies. Men, on the other hand, view family special events as occasionally interfering with work (Anleu & Mack, 2016). The authors identify a gender-based framework where "for men, the family sphere shrinks, changes or disappears to accommodate the expansion of the work zone, while women articulate deliberate strategies to maintain the shape and volume of the family zone as work free" (p. 235), avoiding any further expansion of work responsibilities. In addition, "the period of intense career building coincides with a woman's peak biological childbearing age," requiring inevitable "interruptions" in the careers of women (Rinke, 1981, p. 2421).

Geographical mobility gives individuals a competitive advantage. Geographical relocation is generally defined as moving between different cities (McLean, Morahan, Dannels, & McDade, 2013), but a change of institution within the same city may provide similar career benefits. The willingness and ability to relocate has been shown to be associated with promotion, and advanced administrative positions for women in their mid-career, who were enrolled in an executive leadership program (McLean et al., 2013). However, presence of family and dependent-care obligations may affect women's geographical mobility more than men's, thereby potentially limiting their career advancement (McLean et al., 2013). As a result, these factors may adversely affect women's ambitions and motivation for seeking and engaging in a leadership track.

Motivation and Ambition

Women are more likely than men to consider leaving academic medicine (Fried et al., 1996). According to the most recent AAMC report, "women make up a little more than one third (38%) of full-time academic medicine faculty" (Lautenberger, 2014). This may in part be due to men and women having different career goals. In a brief survey of randomly selected young management students at a public university, 136 men and women were asked to rank prospective life events such as "having children," "starting a career," "contributing to society," "personal fulfillment," and "climbing the corporate ladder" (Shore et al., 2014, p. 167). The rankings were similar except in two categories: men ranked "climbing the corporate ladder" significantly higher than women. Women, on the other hand, ranked "personal fulfillment" significantly higher than men (Shore et al., 2014).

A traditional view has been that women are less likely to negotiate for salary, an administrative role, or increased recognition (Bickel et al., 2002). This could be related to their "naïveté" (Bickel et al., 2002), of expecting recognition without asking for it. It could also be related to a skewed sense of self-worth and of their qualifications (Bickel

et al., 2002). However, it has been suggested that "what women want from [their careers in academic medicine] will affect what they get" (Costantini, 1990, p. 741). For example, women do engage routinely in negotiations and outperform men when negotiating on behalf of others (Ely et al., 2011). In addition, women are known to successfully negotiate for what matters to them (Ely et al., 2011). Accordingly, failing to negotiate for promotion or for leadership positions may reflect a lack of commitment to the position as opposed to lack of negotiation skills. In addition, women may be deterred if they implicitly believe that in order for them to accede to leadership positions, they will have to embrace male characteristics or sacrifice their work-life balance (Ely et al., 2011). Also, women are more "risk-averse" and may try to avoid new situations with unknown outcomes (Ely et al., 2011) or avoid bold moves to prevent disapproval (Ely et al., 2011).

Women are less likely to boast about their achievements and are more likely to favor collaborative group interactions over individualistic performance (Bickel et al., 2002). This preference for collaborative work can prevent their contributions from being recognized by their chairs and colleagues. In addition, women may view or be willing to accept leadership as a predominantly male social construct. In a series of experiments that were later reproduced by different researchers with similar results, Megargee (1969) explored the behaviors of pairs of individuals assigned to gender-neutral tasks that required choosing a leader. Individuals were identified as high or low dominant, based on their responses to a previously administered instrument that explored "factors of leadership ability, dominance, persistence and social initiative" (p. 292). In same-sex dyads and mixed-sex pairs where men were high dominant, the high dominant individual was selected as leader. However, in mixed-sex pairs where women were high dominant, men were still more likely to emerge as leaders (Megargee, 1969). In these experiments, women were more likely to follow the gender role expectations than their own personality drive and motivation (Nyquist & Spence, 1986).

Summary

A selection of the literature on the challenges faced by women in academic medicine and fields was reviewed. The findings were grouped and presented in the following areas: (1) environmental factors, (2) infrastructure and resources, (3) situational factors, and (4) motivation and ambition. Challenges on women's paths to leadership were described and discussed. In addition, medical school education and training do not prepare physicians to the demands of leadership and how to overcome and navigate career-related challenges. Also, little is known of how women in leadership learned how to develop useful strategies and how to acquire the necessary knowledge, skills, and attitudes to overcome those challenges and achieve leadership.

Topic Three—Adult Learning Theories

Leaders have been described by their personalities, implying innate characteristics that are difficult to influence (Day et al., 2014), and by their behaviors, implying trainable attributes that respond to known environments in a predictable manner (Day et al., 2014; Shore et al., 2014). Neither definition is sufficient to describe the process of leader development and learning (Day et al., 2014). In developing expertise, the leader engages in "multilevel, longitudinal," and intrapersonal development in their skills, experiences, personality and self-development (Day et al., 2014). In developing their leadership knowledge and skills, it is assumed that adult learners are capable of self-direction and self-management of their learning, can use their previous experiences to expand their knowledge, have learning needs related to their social roles, are interested in practical application of the knowledge, and have internal motivation for learning (Merriam, 2001).

Leadership as an identity can be deconstructed into two parts: integration into one's role as leader and an aspirational outlook (Ely et al., 2011). Integration of the leadership role results from a series of transactions with others, from feedback, and from

self-reflection on those interactions (Ely et al., 2011). When these interactions are mostly positive, they reinforce the leader's identity, self-confidence and self-efficacy in seeking growth and increased opportunities (Ely et al., 2011). Also, a leader who aspires to goals that are aligned with his or her personal beliefs and who works for a perceived greater good will feel more fulfilled in their position as leader (Ely et al., 2011). This, in turn, will allow others to view the leader as effective and "authentic" (Ely et al., 2011).

In this section, a selection of relevant literature on adult learning theories and leadership is explored, reviewing (1) informal learning in the workplace, (2) experiential learning and reflective practice, and (3) social cognitive theory.

Informal Learning in the Workplace

Learning in the workplace, through transmission of knowledge or creation of new knowledge, can occur either intentionally or incidentally, and can result in explicit or implicit knowledge (Eraut, 2000; Nonaka, 1994). At the outset, there is a distinction between training and learning. Training, often involving well-defined instructional experiences, employs a formal learning process geared toward the development or acquisition of a specific skill, attitude, or knowledge (DeGeest & Brown, 2011; Marsick & Volpe, 1999) that would "lead to improved performance in a specific environment" (Grossman & Salas, 2011, p. 104). On the other hand, learning in the workplace is defined as a lifelong process (Marsick & Volpe, 1999). A taxonomy of learning has been described to frame the learning of adults, especially in the workplace, as formal, non-formal, and informal (Merriam, Caffarella, & Baumgartner, 2007; Schugurensky, 2000). Formal learning is defined as a structured, planned, curriculum-driven, and institution-based process whose aim is the acquisition of explicit knowledge, recognized by grades, awards, or certificates (Merriam et al., 2007; Schugurensky, 2000). Medical school education is an example of formal learning that occurs in classrooms, and that is instructor-led (Merriam et al., 2007). Non-formal learning refers mostly to a voluntary,

short-term, learner-driven process, outside of traditional educational institutions, often delivered in a community-based setting (Merriam et al., 2007; Schugurensky, 2000). Continued medical education of physicians is an example of non-formal learning, which is delivered during conferences and workshops. The resulting knowledge is often explicitly recognized and can be shared formally in lectures or workshops. Non-formal knowledge can also be shared as an "informal exchange of information" along social and professional networks that could provide, for example, insight into the power structure of the organization (Rinke, 1981). The curriculum and the design of non-formal learning is flexible, hands-on, and targets the recognized needs of the learner (Merriam et al., 2007). Finally, informal learning, the most prevalent form of adult learning, pervades all activities at work or in life, and yet is the least likely form of learning to be recognized by the learner (Merriam et al., 2007). Informal learning is "unstructured," "unplanned" (Merriam et al., 2007), and independent of the organizational curriculum (Schugurensky, 2000). It accounts for most of the learning in the workplace (Le Clus, 2011; Merriam et al., 2007), and it can supplement the preexisting knowledge or lead to transformative learning (Schugurensky, 2000). Informal learning can be self-directed, incidental, or tacit (Merriam et al., 2007; Schugurensky, 2000). These forms differ in two characteristics: the intentionality of the process and the consciousness of the resulting knowledge (Schugurensky, 2000). Self-directed informal learning is intentional and leads to conscious, explicit knowledge. Incidental learning lacks intentionality, but results in explicit knowledge. Tacit learning or socialization is not intentional and results in implicit knowledge of which the learner is often unaware (Schugurensky, 2000). Implicit or tacit knowledge is difficult to describe, quantify, or communicate, and can extend to both the cognitive and technical competencies (Nonaka, 1994). The following section reviews the literature on informal learning in the workplace related to leadership development, including self-directed, implicit, and tacit learning.

Self-directed learning. The hallmark of self-directed learning (SDL) in the workplace is a conscious, deliberate, and intentional effort by the learner (Eraut, 2000; Nesbit, 2012; Tough, 1979), independent "of an instructor or a classroom," to identify their learning needs and goals and implement the appropriate learning strategies (Knowles, 1975; Merriam, 2001, p. 8). The learner is "empowered" by the exercise of "personal autonomy" in the decision-making process of "what, how, when, and where to learn" (Candy, 1995, p. 81). Physicians are familiar with SDL in their pursuit of continued medical education, which is both a self-imposed quest and a public expectation of "keeping up-to-date" (Candy, 1995, p. 88). SDL is described along "sociological, pedagogical, and psychological dimensions," which refer to the context in which learning happens, the educational applications of the learning, and the cognitive and emotional aspects of the process, respectively (Garrison, 1997, pp. 19-20). SDL can be both a process for and a goal of learning (Candy, 1991). As a process, self-directed learning is learner-controlled with varying reliance on seeking outside assistance (Candy, 1991). As a goal, self-directed learning is the interplay of "self-management" of actions and learning and the "self-determination" or "personal autonomy" (Candy, 1991, pp. 97-100). The resulting model of SDL is described by four related dimensions: self-determination as a personal attribute, self-management of educational goals, self-instruction as a learner-controlled process, and autodidaxy in pursuit of learning opportunities (Candy, 1991).

In response to this focus on self-autonomy in seeking learning, Garrison (1997) proposes a self-directed learning model that adopts a "collaborative constructivist" approach, which has the "individual taking responsibility for constructing meaning while including the participation of others in confirming worthwhile knowledge" (pp. 23-24). Medical education has implicitly adopted this model in defining self-directed lifelong learning of physicians, promoting personal initiative in seeking learning within the defined frames of what constitutes valuable knowledge. This would result in "learning

outcomes that are both personally meaningful and socially worthwhile" (p. 31). Garrison's SDL comprehensive model consists of three inter-related dimensions: self-management, self-monitoring, and motivation. Garrison defines self-management dimension as "external task control specific to the management of learning activities" (p. 22). Specifically, self-management refers to formulating the learning needs and corresponding goals, identifying the methods to achieve the learning, and assessing the available resources and support. Thus, self-management relies on three variables: proficiency of the learner or their skills, resources available, and interdependence with standards and practices within the learning context. Self-monitoring refers to the "responsibility to construct meaning," to build or change existing knowledge, while relying on internal and external feedback. Motivation influences the initiation and the maintenance of engagement in SDL. In this model, motivation is determined by the "perceived value" of the desired learning goals, the affective state of the learner toward the learning task, and the learner's self-efficacy. Garrison describes self-efficacy as a confluence of personal factors and perception of contextual resources and barriers.

Self-directed learning for leadership development involves acquiring a set of "intrapersonal, interpersonal, and conceptual skills" (Nesbit, 2012, p. 205). The first step for self-directed learning is a "self-understanding phase" in which the learner aims for an assessment of developmental needs, and identification of personal strengths and weaknesses compared to the expected leadership competencies (Nesbit, 2012). In the self-change phase, strategies are self-selected and action plans self-implemented (Nesbit, 2012). These phases hinge on the interplay of managing feedback and the resulting emotional response, engaging in self-reflection, and employing self-regulation (Nesbit, 2012). Brown and Posner (2001) correlated learning tactics with leadership practice in a study of 312 managers and professionals, from different organizations, enrolled in various management development courses, including MBA. They reported that individuals who employed learning tactics consistently were more likely to engage in

leadership practices and behaviors. In particular, "high-thinking learners," who engage in self-directed conceptual knowledge acquisition, "were more frequently engaged in all […] aspects of the leadership practices than their counterparts in the low thinking learners' category" (p. 277).

Despite its prevalence and importance, self-directed learning does not account for all of the leadership behavior. Adult learners may not be able to correctly identify the skills needed for the position, to accurately self-evaluate their developmental level, or to know how to engage in self-directed activities (Smith, Sadler-Smith, Robertson, & Wakefield, 2007). In addition, critical reflection is needed to appraise personal learning needs and "existing beliefs" (Garrison, 1997). Conversely, when beginning a new role or position, they may appropriately recognize the need for expert guidance (Miflin, Campbell, & Price, 2000), even if this need is not explicitly formulated. In their study, Brown and Posner (2001) found that action-learning orientation, where learners prefer to learn by trial and error, was also positively correlated with demonstration of leadership behavior.

Incidental learning. The "trials and errors" of on-the-job experiences often drive the learning in the workplace (Marsick & Volpe, 1999). Incidental learning was originally described by Marsick and Watkins (2001) as lacking intention and resulting in learning that is more likely to be unconscious, "taken for granted or tacit" (p. 26). The learning can later be made conscious by reflection and further probing (Marsick & Watkins, 2001). In Schugurensky's (2000) taxonomy, incidental learning is unintentional but leads to conscious learning. Incidental learning is often initiated by an unanticipated "trigger" or event, which is interpreted through the preexisting framework of the learner's knowledge (Marsick & Watkins, 2001). The incident is experienced and interpreted, solutions are generated and applied, and results are observed and assimilated (Marsick & Watkins, 2001). Deviations from expected results would allow the learner to "draw lessons" for future action plans (Marsick & Watkins, 2001). The context of the learning

can influence the process and the outcome of learning, especially in complex situations involving multiple players, novel or unusual situations, or "emotional factors" (Marsick & Watkins, 2001). The ability to learn is contingent on

> the availability of appropriate resources (time, money, people from whom to learn, available knowledge about an unknown or ambiguous phenomena), willingness and motivation to learn, and the emotional capacity to take on new capabilities in the middle of what could be a stressful challenge. (p. 30)

In addition, because of its nature, incidental learning doesn't have a predefined structure or designated facilitators that could help redirect learners, challenge their social and cultural assumptions, or point out "blind spots" in their interpretation of the situation (Marsick & Watkins, 2001). Critical reflection is needed for learning to proceed and to avoid persistence in an erroneous interpretation of events (Marsick & Watkins, 2001).

Tacit learning. Tacit knowledge is a type of practical knowledge that is "deeply rooted in action, commitment, and involvement in a specific context" (Nonaka, 1994, p. 16), and it develops in response to workplace challenges and personal experiences. Tacit knowledge consists of the cognitive elements, or "mental models" that influence how we perceive the world, and the technical elements that are the concrete skills we possess (Nonaka, 1994). Because of its characteristics, tacit knowledge is "relatively inaccessible" and cannot be transferred directly to leaders (Wagner & Sternberg, 1985); instead, programs could aim to increase experiential learning opportunities in the workplace from which tacit knowledge would derive (Horvath et al., 1999). Tacit knowledge manifests as intelligent behavior in the practical setting (Wagner & Sternberg, 1985) and reflects the unconsciously "accumulated" knowledge of past experiences (Eraut, 2000). Eraut (2007) defines this practical knowledge as "personal knowledge" that describes how individuals "think, interact and perform" in practical situations, "incorporating people's capabilities […] and the understandings that inform them" (p. 406). Tacit knowledge influences performance in the following four elements: initial

assessment, decision-making, action-taking, and metacognition (Eraut, 2007). The focus is on how people put this knowledge to "use," rather than its "truth" (Eraut, 2007). This tacit knowledge can influence individuals in three areas of their work: managing self to increase productivity, managing others to motivate and to collaborate with others, and managing one's career to advance and promote visibility (Wagner & Sternberg, 1985). Wagner and Sternberg explored the presence of tacit knowledge, needed for career success, in 187 subjects with varying knowledge and work expertise in academic psychology. The authors asked faculty, graduate, and undergraduate psychology students to rate the importance of the choices associated with 12 work-related situations. Their results showed significant differences in item ratings between- and within-groups, supporting the authors' hypotheses that (a) "expert-novice differences exist in tacit knowledge" (p. 451), which is important for professional success, and that (b) differences in tacit knowledge are correlated with career performance criteria. In addition to influencing performance, the practical knowledge acquired from work experiences allows the leader to make ethical decisions based on moral judgment and values (Nonaka & Takeuchi, 2011).

At the individual level, a major factor in promoting new knowledge formation is the individual's commitment in an organization; this commitment is the result of "intention," "autonomy," and "environmental fluctuation" (Nonaka, 1994). Intention is how individuals appraise their environment in order to make meaning. Intention is defined as action-oriented, purpose-driven, bounded by a "frame of value judgment," and context-specific (Nonaka, 1994). Autonomy refers to the degree of flexibility that is given to individuals in the workplace to acquire and interpret information beyond rigid specifications (Nonaka, 1994). Fluctuation in the environment signifies changes that occur in unpredictable patterns. These random and often ambiguous situations induce individuals to reframe their perceptions and their understanding of the environment (Nonaka, 1994).

The understanding of what constitutes effective leadership may vary between individuals in an organization and may be implicit and difficult to externalize (Cartwright, 2002). This understanding may be part of a "cultural knowledge" in the workplace, which as described by Eraut (2007) is "acquired informally through participation in social activities" in the organization (pp. 405-406). The flow of knowledge between individuals in the workplace is the result of conversion of knowledge along four dimensions: socialization, combination, externalization, internalization (Nonaka, 1994). Through socialization, tacit unspoken knowledge is shared between individuals in the experiential work context. Social interactions in an organization can facilitate the flow of informal knowledge when individuals seek feedback, help, or information (Froehlich, Beausaert, & Segers, 2017) through "conversations, social interaction, teamwork and mentoring" (Le Clus, 2011, p. 364). Through combination of information, individuals explicitly share and create knowledge by engaging in lectures, workshops, and meetings. Internalization refers to the learning that results from conversion of explicit knowledge into tacit knowledge. Externalization is the process of transforming tacit knowledge into an explicit form of knowledge (Nonaka, 1994). Of the four modes of knowledge creation, the concept of externalization is the least developed (Nonaka, 1994). Leaders learn more effectively within their organization when exposed to a coordinated cycle of the different knowledge conversions (Nonaka, 1994). This includes socializing in teams for knowledge sharing, combining information from different sources, externalizing tacit knowledge with the use of metaphors, and reflecting on experiences to internalize the knowledge (Nonaka, 1994).

Experiential Learning and Reflection

Experiences can be defined as the "total response of a person to a situation or event" including emotional, cognitive, behavioral, and reflective elements (Boud, Keogh, & Walker, 1985, p. 18). In this definition, experiences can be interpreted as the collection

of where, how, and what: where the situations are experienced, how they are felt and interpreted, and what learning results from them. Individuals learn how to lead from job experiences, from observing others, and from formal education and training (Brown & Posner, 2001). Learning to become a leader cannot be completed exclusively in the confines of a classroom, or at the conclusion of a workshop (Hirst, Mann, Bain, Pirola-Merlo, & Richver, 2004; Watkins, Lysø, & deMarrais, 2011), as a formal or non-formal process. Rather, leadership development depends on real-life experiences and challenges that promote the acquisition of the required knowledge, skills and, attitudes (Watkins et al., 2011) and the reframing of existing knowledge (DeRue & Wellman, 2009). In studying how professionals learn in the workplace, Eraut (2007) confirms that the "majority of workers' learning occurs in the workplace itself" (p. 419). It is estimated that more than 70% of leadership development occurs through informal and on-the-job experiences (DeRue & Wellman, 2009). Solving "real-life" problems helps the leader develop the skills and behaviors necessary for their success (Hirst et al., 2004). Such workplace problems are more likely to expose the leader to the team dynamics and to organizational constraints, the understanding of which is valuable for effective team performance (Hirst et al., 2004). In a study of 50 leaders from four different research and development organizations, Hirst et al. (2004) sought to explore the relationship between learning through solving work problems and the displayed leadership behavior. Leaders, experts, and novices self-reported on their recent learning from work projects in the following areas: management of individuals, team management, understanding how the organization works, dealing with people outside the team, and learning technical knowledge. The authors found a positive correlation between learning leadership skills and practicing leadership that "encourage and stimulate teamwork" (p. 312).

Learning from experience is the result of interaction between the nature of the experiences, the context in which they are experienced, and the characteristics of the learner (Le Clus, 2011). Experiential learning is more likely to yield knowledge when the

experiences are related but varied, and when the experiences are physical and hands-on (Nonaka, 1994). The U.S. Army, for example, provides an extensive, career-long professional formal training that is integrated with work experiences (Horvath et al., 1999). The Army also recognizes the importance of experiential learning for obtaining new knowledge that is not otherwise "supported by doctrine or through formal training" (p. 43). In addition to the quality and hands-on nature of the experiences, the knowledge derived from those experiences depends on the context of the work experiences (Le Clus, 2011; Nonaka, 1994; Wagner & Sternberg, 1985). This "situated learning" depends on the interaction of learners and the work environment for the construction of knowledge in the specific context (Le Clus, 2011). Learning is enhanced in environments where the learner has the ability to regulate "what and how they learn" and when the appropriate resources are provided (Marsick, 2009). Conversely, transfer of learning is the "extent to which the learning that results from a training experience transfers to the job and leads to meaningful changes in work performance" (Baldwin, Ford, & Blume, 2009, p. 41). This requires that the individual members engage in learning, that they acquire knowledge, and that they transfer this knowledge to the workplace. Leaders can help promote a favorable learning environment and build a "good climate in which to conduct learning activities" (Boud et al., 1985, p. 37) by acting as "learning-committed" role models (Ellinger & Cseh, 2007), by providing "incentives" for individuals to engage in formal learning, "resources" to support the learning, and opportunities for collaboration between peers (Marsick & Watkins, 2001). Collaboration can be enhanced by coaching, mentoring, and networking opportunities (Ellinger & Cseh, 2007). Finally, learning from experience is influenced by the learners' characteristics and their reactions to the experienced situation (Boud et al., 1985). This, in turn, depends on how previous experiences have shaped their worldviews (Boud et al., 1985). In addition, other factors that affect knowledge acquisition from experience include the learners' cognitive ability, self-efficacy, and motivation to learn (Grossman & Salas, 2011). Previous successes in

similar situations will positively affect how the learner approaches and learns from the experience (Boud et al., 1985). Conversely, learning is hindered in situations that are associated with negative emotions related to similar past experiences (Boud et al., 1985).

Experimenting with leadership identities in different contexts and incorporating the feedback and the reflections from those experiences weave into forming the leader's identity (Day et al., 2014; Ely et al., 2011). However, the knowledge derived from those experiences may be difficult to articulate (Horvath et al., 1999). Reflection, "a form of response of the learner to experience" (Boud et al., 1985, p. 21), can help enhance and crystallize the acquired tacit knowledge (Boud et al., 1985; Nonaka, 1994).

Reflection. It is by reflection that a practitioner can internalize the tacit knowledge acquired in-action (Schön, 1984; Watkins et al., 2011). Reflection on the experience serves to enhance the learning and prepare us for further experiences (Boud et al., 1985). Dewey (2011) defines reflective thinking as "that operation in which present facts suggest other facts (or truths) in such a way as to induce belief in the latter upon the ground or warrant of the former" (pp. 8-9). Reflective thought is triggered by the "mental uneasiness" resulting from a stimulus that challenges previously held beliefs and implies the "somewhat painful" process of "suspending judgment during further inquiry" (p. 13). According to Dewey, in contrast to belief, the "essentials of thinking" are "to maintain the state of doubt and to carry on systematic and protracted inquiry" (p. 13). Adapting the scientific method into his construct, he describes six steps for reflective thinking: (1) a trigger or experience, (2) initial and involuntary interpretation, (3) intellectualization or description of the experience, (4) analysis to generate hypotheses, (5) continued and deeper reasoning of selected hypotheses, and (6) experimentation with the selected hypothesis (Dewey, 2011; Marsick, 2009; Rodgers, 2002). However, this approach has been described by Argyris (1991) as "problem solving" or "single-loop" learning, which is "focused on identifying and correcting problems in the outside environment" (p. 4). Double loop learning, on the other hand, as described by Argyris in the '80s, involves

prompting learners to engage in meaningful reflection beyond a review of the events and experiences but rather to explore and challenge their underlying assumptions (Cartwright, 2002; Nesbit, 2012) and then "attend" to the affective dimensions of experiences (Boud et al., 1985, p. 29). Reflection would thus require exploring one's feelings, which could include using positive feelings and "removing obstructing feelings" to enhance the reflection process and the learning (p. 29). Using double-loop learning strategies in the workplace can help transform knowledge from unspoken and tacit to explicit (Cartwright, 2002) and promote personal leadership development (Nesbit, 2012). Learning from reflection on an experience can be enhanced by four processes: association of the new information with preexisting knowledge, integration of different sources of data, validation of the resulting ideas and emotions, and appropriation or assimilation of the resulting knowledge (Boud et al., 1985). These reflection processes can also be seen as learning outcomes themselves (Boud et al., 1985).

Reflection is viewed as an intentional, personal choice and a "critical skill in self-development" (Nesbit, 2012, p. 207). Individuals may be at different readiness stages for engaging and learning from reflection (Boud et al., 1985). Furthermore, engaging in meaningful reflection can be "accelerated by appropriate support" from others and from the organization (Boud et al., 1985, p. 36). It is suggested that support given to learners for reflection can be delivered through formal mentoring relationships, peer support, or professional networks (Boud et al., 1985). For example, learning in the organization can be promoted by communities of practitioners who engage in "co-reflective practice" to learn from their collective experiences and to affirm their identities (Schön, 1984; Watkins et al., 2011).

The interplay between the individual's approach to learning, their reaction to work experiences, and the work environment in which they practice can help the development of leadership and can be further explored through the lens of social cognitive theory (DeRue & Wellman, 2009; Manz & Sims, 1980).

Social Cognitive Theory, Motivation, Goal-direction, and Self-efficacy

Social cognitive theory, "founded on an agentic perspective," recognizes that human functioning is the result of the interplay of behaviors in which individuals engage, the environmental factors that influence them, and intrapersonal factors (Bandura, 2012, p. 11). As a result of this interaction, individuals are "agents who exert intentional influence" over their functioning and the resulting "course of events" (p. 11). Behaviors include the set of observable reactions displayed in response to experiences. The environment can be "imposed, selected, or constructed" (p. 11). Individuals may not have control over an "imposed" environment; however, they can control how they perceive it or how they react to it (Bandura, 2012). Alternatively, they can select or create the environment in which they practice. Intrapersonal factors that affect individuals' functioning include motivation, goal-orientation, and self-efficacy.

Motivation. The "concept of motivation implies that people are acting with purpose, with the intention to attain some outcome and the belief that they are able to" (Deci & Ryan, 2000, p. 76). The resulting intentional behavior may be the effect of self-determination or may be controlled by other "interpersonal or intrapsychic forces" (p. 77). Extrinsic motivation for engaging in a behavior results from promises of rewards or threats of punishments, while intrinsic motivation results from the enjoyment of the activity itself, without the need of other rewards (Deci & Ryan, 2000). Intrinsic motivation provides a more sustainable drive for learning and for mastery performance (Deci & Ryan, 2000) and is "essential for meaningful and worthwhile learning" (Garrison, 1997, p. 29). However, extrinsic reinforcement of the behaviors initiated by intrinsic motivation can help sustain those behaviors in the long term (Manz & Sims, 1980). In the social context, intrinsic motivation results from a need for relatedeness (or affiliation), competence (or effectiveness), and autonomy (or self-determination) (Deci & Ryan, 2000). In the work context, some experiences are more likely than others to provide a developmental challenge that results in intrinsic motivation and promotes the

competence of the learner. This, in turn, can lead to improved performance and learning (DeRue & Wellman, 2009). Work experiences are more likely to provide a developmental challenge when they are characterized by the following: "unfamiliar responsibilities, high level of responsibility, creating change, working across boundaries, and managing diversity" (p. 860). Compared to easy experiences, "optimally" challenging experiences are more likely to motivate learners to "exert the effort" to develop the skills needed, unless the challenge reaches a level that hinders further learning (Deci & Ryan, 2000; DeRue & Wellman, 2009). In a mixed-methods study of 99 mid- and senior-level managers from different industries, enrolled in the MBA programs of one large university, De Rue and Wellman (2009) explored "how individuals develop leadership skills via on-the-job experiences" using surveys, interviews, and previously validated instruments (p. 869). They concluded that exposure to challenging experiences can promote the development of leadership skills; however, challenge and development did not follow a linear relationship. Instead, "work experiences can be overwhelming and counterproductive if they reach levels of developmental challenge for which the individual is not ready" (p. 870). The effect of the experiential challenge is further modulated by the availability of feedback in the work environment and by the individual's learning goal orientation (DeRue & Wellman, 2009). Feedback can facilitate learning by providing information about the learner's behaviors and performance, in order to promote self-awareness, and to "reduce the stress associated with challenging work experiences" (p. 869). Feedback availability may be more useful in highly challenging experiences (DeRue & Wellman, 2009). In addition, positive feedback can increase intrinsic motivation, while negative feedback is associated with "detrimental effects" on competence and intrinsic motivation (Deci & Ryan, 2000). Intrinsic motivation in the learners was associated with a "higher quality" and "mastery" of learning, and better engagement in meaningful self-directed learning (Deci & Ryan, 2000).

Goal orientation. An individual's goal orientation may explain why different developmental outcomes are achieved from similar experiential exposures (DeGeest & Brown, 2011). Goal orientation lies on a spectrum ranging from avoid performance goal orientation (APGO), to performance prove goal orientation (PPGO), to mastery, or learning goal orientation (LGO) (DeGeest & Brown, 2011). Performance and learning goal orientation differ in their focus. Individuals with a performance goal orientation focus on achievement, believe that abilities are fixed, and may be influenced by external motivators. Individuals with a learning goal orientation aim to obtain personal mastery, believe that abilities are flexible, and are driven by internal motivators (DeGeest & Brown, 2011). Leaders who favor a learning goal orientation are more likely to learn new skills and behaviors needed for their leadership position (Hirst et al., 2004) and to view challenges as opportunities for development (DeRue & Wellman, 2009).

Moving to leadership frequently requires a change in responsibilities and a shift in the professional identity (Ely et al., 2011). This needed transformational change might be hindered by the individual's reluctance to move from a comfort zone into the unknown (Ely et al., 2011). Having a "career-growth orientation" may help the leader learn from their experiences, leverage their personality attributes, and engage in self-development activities (Day et al., 2014; DeGeest & Brown, 2011). In addition, women with a learning goal orientation may view leadership skills as malleable and that these skills can be acquired and developed (Hoyt & Murphy, 2016). This mindset would in turn shield women from the stereotype threat described with leadership roles (Hoyt & Murphy, 2016).

An early outcome of learning goal orientation is the development of "task-specific self-efficacy" (DeGeest & Brown, 2011, p. 164). Self-efficacy can in turn have a positive effect on learning and leadership development.

Self-efficacy. Self-efficacy, first described by Bandura, is the perception of one's own competence to engage and successfully complete a task, a skill, or a behavior

(Garman, Wingard, & Reznik, 2001), and it is positively correlated with work-related performances (McCormick, Tanguma, & López-Forment, 2002). Self-efficacy varies "across action domains and situational conditions" and depends on the context of its assessment (Bandura, 2012, p. 13). Leadership self-efficacy is thus the perception of one's competence in leading others (Bobbio & Manganelli, 2009; Hannah, Avolio, Luthans, & Harms, 2008). Self-efficacious individuals are generally described as "motivated, persistent, goal-directed, resilient, and clear thinkers under pressure," echoing the descriptions of efficacious leaders (McCormick et al., 2002, p. 36). In addition, self-efficacy drives individuals to "seeking learning opportunities" in the workplace (Eraut, 2007) and to successfully overcome challenges (Hannah et al., 2008). The concept of means efficacy was advanced to include the resources available to individuals to perform their tasks, and is conceptualized as resulting "from perceptions of an enabling and supportive context" (Hannah et al., 2008, p. 677).

Self-efficacy is developed in four ways: mastery experiences, social modeling, social persuasion, and physiological cues (Bandura, 2012). Mastery experiences refer to the involvement in challenging experiences, which allows the development of resilience and perseverance to successfully overcome those challenges (Bandura, 2012). Social or role modeling refers to observing others demonstrate resilience in the face of challenges and ultimately succeed at performing the desired task (Bandura, 2012). Social persuasion provided by others helps individuals believe in their capacity and can promote their resolve and perseverance (Bandura, 2012). Social modeling and persuasion are contingent on the individual's "socialization history," as well as the extent of their social connectedness in the workplace and of their professional network (Manz & Sims, 1980). Finally, individuals tend to associate physiological and emotional cues with their capacity to perform a task (Bandura, 2012).

There is a positive reciprocal relation between work experiences and the development of self-efficacy. Work experiences can promote self-efficacy, which then

can help individuals seek additional work opportunities and leadership roles. In a three-year longitudinal study on early career learning of 92 professionals (nurses, engineers, and accountants), Eraut (2007) found through workplace observations and participants' interviews that self-efficacy was promoted by meeting the challenges at work and by feeling supported by colleagues. In that study, when the challenges at work were overwhelming, the motivation derived from the work value helped nurses who were early in their career.

Individuals with high self-efficacy are more likely to seek leadership roles. A questionnaire designed to explore frequency of attempts at leadership, previously held leadership roles, and self-efficacy toward leadership was administered to 223 junior and senior students in undergraduate psychology classes (McCormick et al., 2002). The results showed that individuals with high leadership self-efficacy were more likely to "attempt to assume leadership roles" than those with low self-efficacy, and that leadership self-efficacy was positively related to the number of previous leadership experiences (p. 38). The authors also noted that women have significantly "lower leadership self-efficacy compared to men of similar age and education level," regardless of previous leadership experiences (p. 38). Self-efficacy influences which tasks women are likely to undertake and how they will handle setbacks and challenges (Garman et al., 2001). In the absence of a well-formed professional identity, women's self-efficacy is unlikely to develop (Rinke, 1981). A woman with low self-efficacy is less likely to attempt to take on projects or leadership positions (McCormick et al., 2002). Also, when faced with challenges, those with low self-efficacy may decrease their efforts, while those with high self-efficacy are more likely to increase their efforts to overcome the challenges (Grossman & Salas, 2011). In addition, the subjective interpretation of leadership experiences through the attribution theory can influence the development of self-efficacy in individuals (McCormick et al., 2002). Women are more likely to attribute their success to luck, to being in the right place at the right time. During a 2016

colloquium of women deans at Columbia University titled "Women and Leadership in the 21st Century University," five of the seven women then serving as deans attributed their career paths and leadership positions to unplanned, fortuitous circumstances.

Individual Learning Paths

Poell and van der Krogt (2014) have described a model of learning paths, where the individual strategically engages in "learning-relevant activities" that serve to promote their professional development. These individual learning paths are described as one of three approaches to professional development in the organization. The first path is focused on providing training opportunities by the organization to its employees. The second path offers support for employees to engage in "didactic self-direction," to identify and organize their learning needs. The third path suggested by Poell and van der Krogt is the individual learning path, where the individual employee takes responsibility for their professional development and learning.

For this research, a similar framework of the learning path was used to explore the learning of women in academic medicine along the elements described in the learning path model: learning themes, learning activities, social learning context, and learning facilitators (Poell & van der Krogt, 2014).

Learning themes refer to the subject matter of the individual's learning. Topics relevant to leadership skill development emerged from the field research. Learning activities refer to "the ways in which individuals learn" (Poell & van der Krogt, 2014, p. 429). These include the types of organizational learning discussed earlier: experiential, critical reflection, formal, and informal. The social context of learning refers to the network that promotes and supports the learning, such as peers, managers, or patients. Learning facilities include both the external material resources for supporting the learning, as well as the social support for those activities. In addition, internal motivators to engage in learning may facilitate learning. The use of this framework helps the

researcher explore the learning of women in academic medicine on the path to leadership by answering "what, how, who, where" questions.

Summary

A selection of the literature on pertinent adult learning theories was reviewed, exploring how individuals learn in the workplace, what motivates them, and how they perceive and approach challenges. In the first part, a sample of literature on learning in the workplace was reviewed, including self-directed, incidental, and tacit learning. Second, the role of work experiences and the importance of reflection to derive the knowledge were reviewed. Finally, an overview of attribution theory and social cognitive theory was presented.

Conclusion

The review of relevant literature presented in this chapter informed the study design and research questions and was continued throughout the data collection and analysis phases. The topics reviewed in this chapter helped frame the research questions. The interview questions explored the perceptions of what constitutes effective leadership among women faculty, the challenges women face in seeking leadership positions, and how they learn to navigate those challenges. In addition, facilitators and motivators of women faculty toward leadership were explored.

Conceptual Framework

The review of the literature informed the design of the conceptual framework used in this research, which was refined and adjusted throughout the study. The conceptual framework is depicted in Figure 1 and in more detail in Appendix A. This conceptual framework guided the development of the coding scheme that is presented in

Appendix B. Characteristics of leadership can be viewed along four dimensions: the nature of leadership, its focus, its context, and its implications. “Nature” of leadership refers to how leadership attributes are seen, as innate personality traits, or acquired and observable behaviors. The “focus” of leadership is the primary emphasis on self, on tasks, or on people. As manager of self, the leader may be perceived as self-aware of personal strengths and weaknesses, developing strategies for effective time management and strategic planning. As manager of tasks, a leader is focused on tasks, outcomes, and productivity. As manager of people, a leader is focused on people, leveraging interpersonal relationships to produce desired results. Challenges to and facilitators of leadership in academic medicine can be classified as environmental, structural, situational, and motivational. Environmental factors refer to cultural and gender-related issues. Structural factors refer to institutional resources and infrastructure. Situational factors refer to personal and life demands. Motivational factors refer to the individual outlook toward their careers. Finally, the learning about leadership and development of a leadership identity are described along the previously described learning paths (Poell & van der Krogt, 2014). This model consists of the learning themes, activities, and context. Learning themes are the topics women choose to explore on their paths to leadership and career advancement. Learning activities in which participants engage include implicit, incidental, self-directed, and experiential learning, as well as reflection. Social learning context refers to sources of learning in the environment, including peers, leaders, and patients.

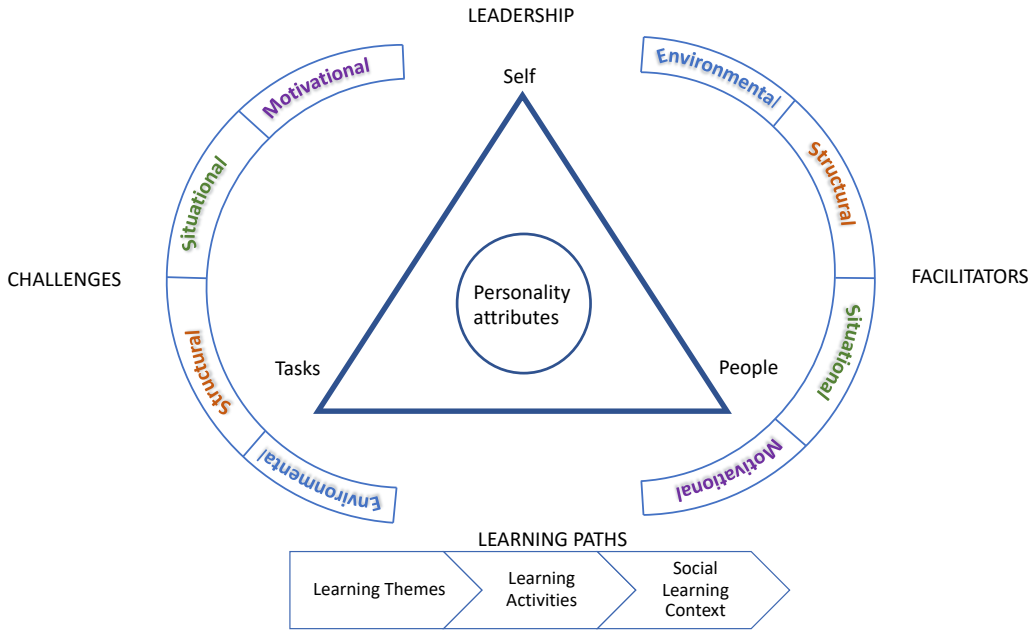


Figure 1. Conceptual Framework

Chapter III

METHODOLOGY

Overview

The aim of this research was to explore the perceptions of full-time women faculty at one large urban academic medical center regarding leadership trajectories within academic medicine, comparing those who are and those who are not in institutionally defined leadership roles. The purpose of this qualitative study was to explore participants' perceptions of the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, how they learned to navigate the challenges, and what they have learned in the process.

In seeking this purpose and to gain insights into the problem, the following research questions were explored:

1. What characteristics do women describe as exhibited in leaders in academic medicine? What characteristics do they believe should be exhibited by effective leaders in academic medicine?
2. How do participants describe their own capacity for leadership?
3. What do participants perceive as the facilitators and the barriers to seeking and achieving a leadership position in academic medicine?

4. a. How did women who are in leadership positions learn to navigate their path to leadership? What did the participants learn in the process?
   b. Why have women who are not in leadership positions chosen not to pursue this path?

This chapter describes the methodology used to address the purpose and research questions. This includes: (a) study design and rationale for the qualitative approach; (b) overview of the information needed; (c) research sample; (d) overview of the research design; (e) methods of data collection; (f) methods of data analysis; (g) issues of trustworthiness and ethical considerations; (h) literature on methods; (i) study limitations; and (j) chapter summary.

Study Design and Rationale

This research is a case study of full-time women faculty in one large academic center, which aimed to explore their perceptions of leadership as well as the learning from seeking and having a leadership role. The research uses qualitative methods to answer the research questions, consisting of 27 semi-structured in-depth interviews.

A qualitative approach to the research questions allowed the researcher to explore in depth the perceptions and views of participants and to "hear the voices" of women faculty toward leadership in academic medicine (Creswell, 2007). As described by Maxwell (2005), qualitative research is best suited when we aim to explore the "meaning" participants make of their experiences, to understand "the context" that influences their perceptions and meaning-making, and to try to "develop causal explanations" for the observed paucity of women in leadership.

The underlying philosophical paradigm is what Creswell (2007) describes as "pragmatism." This research is anchored in a pragmatic worldview for three main reasons. First, the researcher recognizes the complexities of participants' worldviews and

the influence of environmental, cultural, and institutional norms in shaping those views and does not approach the research with a priori notions. Second, the research used sampling across different specialties and expertise to prevent limitations to the exploration of the research questions. Third, the practical implications of this research are important for the investigator, with the expectation that recommendations for faculty development programs can be made based on the results of this research.

The perceptions of women faculty toward leadership were explored as a case study, exploring and comparing their multiple perceptions within the single "bounded system" of a large urban academic center, with "detailed, in-depth data collection" using interviews (Creswell, 2007, p. 73). The use of interviews provides "descriptive, explanatory, and exploratory" dimensions to the research, as described by Yin (2009, p. 6). The cases are selected based on "purposeful sampling" (Creswell, 2007, p. 125), where the participants based on their years of experience as faculty members in an academic setting and involvement in leadership roles provided different perspectives to address the research questions.

Overview of Information Collected

The purpose of this qualitative study was to explore participants' perceptions of the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, how they learned to navigate the challenges, and what they learned in the process. To answer the research questions, the study used in-depth semi-structured interviews with a purposive sample of 27 participants, 14 of whom are in academic leadership positions, 6 holding hospital, non-academic leadership positions, and 7 not holding any leadership positions. The

information needed to answer the research questions fell under three categories: demographic, conceptual, and perceptual.

Demographic data were collected and included participant's age, years in practice as faculty in academic medicine, professorial rank, marital status, leadership role, dependent care responsibilities, and specialty affiliation.

Conceptual information about women in leadership, women in academic medicine, as well as reflective practice, forms of learning, and learning from experience, was obtained from the literature review. These conceptual data helped inform the conceptual framework of the study and assisted the researcher in analyzing and interpreting the collected data.

The perceptual information on how women perceive the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, how they learned to navigate the challenges, and what they learned in the process was obtained from the interviews.

Research Sample and Study Site

The participants in this study are women physicians who are full-time faculty in one large urban academic center. The site was chosen because of accessibility to the researcher and because it is one of the large academic centers in the Northeast of the US, with several potential participants representing different specialties and in various positions of leadership. The study site resembles in its structure most academic centers in the US. It consists of two systems, each with an independent leadership and administrative infrastructure: a hospital system that oversees the clinical and patient-related operations, and a university system that regulates the medical school and the academic, research, and educational missions. Accordingly, physicians in this system

have dual appointments: hospital affiliates and university officers. The university academic appointment determines for the physicians the benefits they receive, their promotions, and the associated academic titles. To define academic leadership, the researcher used the findings of the AAMC reports, which describe academic leadership across medical schools. Academic leadership can be at the division, department, or medical school level. Similarly, physicians may pursue hospital-based leadership, such as directors of units or centers within the hospital system. These hospital leadership positions are not included in the AAMC report. In addition, physicians who are hospital leaders may or may not hold academic titles or appointments and may or may not be involved in patient care. By contrast, physicians in academic leadership roles maintain an active direct involvement in the academic mission of the institution. While the primary focus of this research was to explore the perceptions of women toward academic leadership, the presence of hospital-based leadership roles among the study participants was noted and correlated to the findings.

According to the academic center's Office of the Provost, there are 17 clinical departments, with 1844 clinical faculty with full-time appointments; 46% or 854 of whom are women (University, 2016). Women's representation in positions leadership at this center are on par with the national averages reported by the AAMC (D'Armiento, Witte, Dutt, Wall & McAllister, 2019). According to that recent study, 11% of the chairs and 28% of division leaders within the study center are women.

This qualitative study used semi-structured, in-depths interviews of a purposefully selected population sample to answer the research questions. In selecting participants for interviews, the researcher used purposive sampling (Teddlie & Yu, 2007) in order to optimize representativeness and relevance of the study sample. Participants were selected in a non-random manner, based on their anticipated ability to contribute answers to the research questions. Purposive sampling was achieved by categorizing the study population into sequential strata that are relevant to the research questions, using a three-

step approach. The sampling framework included leadership position, years of practice, and subspecialty. With this approach, women who are full-time faculty with clinical responsibilities were first grouped according to having or not having an institutionally defined leadership role in academic programs. These roles could be at the division level (such as program director or division chief), departmental level (such as chairperson or vice chair), or organizational level (dean, vice dean, associate or assistant dean). Leadership positions were identified from the online search, from the researcher's personal knowledge of the study site, and later from recommendations from study participants. The two groups were then further characterized according to numbers of years in practice in academic medicine, generating three subgroups. This grouping is adapted from the stratification used by the Association of American Medical Colleges for determining eligibility of women applicants to their career development seminars (AAMC, 2016). Based on the number of years in practice, participants were stratified as early, mid, or advanced career. Early career participants are faculty members with fewer than 5 years in academic medicine. Mid-career faculty are those who have been practicing academic medicine for 6-15 years. Advanced career participants are faculty members with more than 16 years of experience in academic medicine. Information on number of years in practice was obtained from the publicly available, online biographic information of the prospective participants. Finally, the participants' specialties were noted. The 17 clinical departments can be grouped into three categories: Surgical, Hospital-based, and Medical specialties. This stratification allowed for maximal variation sampling, where the different groups of participants provided differing perspectives to the research questions. Subsequently, women faculty without leadership roles were selected as eligible participants to match those with leadership roles, with regard to specialty and years of practice. Table 1 illustrates the distribution of interviewees along the different categories. This stratification helped achieve equal representation between the groups, resulting in 14 participants with and 13 participants without institutionally defined

academic leadership roles. During the process of enrolling and interviewing participants without academic leadership roles, and as discussed earlier, it was noted that 6 of the 13 participants held hospital-defined leadership roles, and 7 had no leadership roles. Within each subgroup, selection of the participants was based on their primary clinical department affiliation with the expectation that the perspectives of the selected participants are representative of those of other members of the same subgroup (Teddlie & Yu, 2007), based on years of practice and on their clinical specialty.

After submitting and obtaining institutional review board approval (Appendix C), the researcher reviewed the online listings of faculty members in each clinical department and division of the study center to identify eligible participants, as described above. Women faculty with full-time appointment in a clinical department within the academic center were eligible to participate in this research. Involvement in patient care was considered as an important variable in this research. Accordingly, research faculty who do not have clinical or patient care responsibilities were not be included in the sample selection. Eligible participants were approached via email that explained the research purpose and design and invited them to participate in an interview (Appendix C). Eligible participants who agreed to participate were then sent another email containing a Doodle poll invite to select a date and time most convenient to them. Interviews were conducted on site, for the convenience of the participants, and were audio-recorded for further analysis. Informed consent forms for the study were shared with the participants on the day of the interview (Appendix D).

Throughout the recruitment phase of the participants, the researcher aimed to match participants who are and who are not in leadership according to their years in practice and their specialty. In addition, a snowballing technique was used whereby participants were asked for recommendations for other interview candidates, based on their aspiration to leadership or because of their career paths. Those recommendations

were later pursued as appropriate, and email invitations were sent to the suggested participants.

In total, 89 individual email invitations were sent out to women faculty, or 10.3% of the 854 full-time women faculty at the study center. Of the 89 participants contacted, 40 did not return a reply, 7 refused to participate, and 42 (47%) agreed to participate. A follow-up email was sent to those who indicated their willingness to participate, providing a link to a Doodle poll to set up the date and time for the interviews. Of the 42 participants who agreed to participate, 33 completed the Doodle poll, and interviews were scheduled accordingly. Six of the scheduled interviews were canceled because of unanticipated and unplanned scheduling conflicts that arose unexpectedly for either the participants or the researcher. Twenty-seven interviews were conducted.

Of those interviewed, 14 women hold institutionally defined academic leadership positions, 6 women hold hospital leadership positions, and 7 women are not in leadership positions. In addition to their experience with leadership, participants were approached based on their years of experience as faculty and on their specialty. The resulting distribution is detailed in Table 1.

Table 1. Distribution of Interview Participants According to Years of Practice as Faculty and According to Specialty

AL= With Leadership, HL= Hospital Leadership, NL=No Leadership

Years of Practice (yrs)	*Surgical Specialties*	*Hospital-based Specialties*	*Medical Specialties*
Early Career (0-5)	0AL, 2HL, 1NL	0AL, 0HL, 1NL	2AL, 0 HL, 2NL
Mid-Career (6-15)	4AL, 0HL, 2NL	3AL, 1HL, 0NL	2AL, 1HL, 0NL
Advanced Career (>15)	1AL, 1HL, 0NL	2AL, 1HL, 1NL	0AL, 0HL, 0NL
SubTotal	5AL, 3HL, 3NL	5 AL, 2HL, 2NL	4 AL, 1HL, 2NL
Grand Total	27 participants: 14 AL, 6HL, 7NL		

In addition, demographic data are detailed in Table 2, which describes the characteristics of each group at the time of data collection (2018), including age, specialty affiliation, and years in practice. Dependent care refers to current obligations and may not reflect past dependent care situation.

Overview of Research Design

The following is an overview of the research design, which unfolded along the following steps:

1. A review of the literature relevant to leadership in academic medicine, women in leadership, self-efficacy toward leadership, and adult learning theories was performed. This literature review informed the design of the research, the formulation of research questions, and the design of the interview protocol. In addition, literature review continued throughout the data collection and analysis phases.
2. Interview protocols were developed to address the research questions based on the literature review (Appendices Ea, Eb, Ec).
3. A proposal defense hearing was scheduled and conducted in November 2017. This was followed by submission to the institutional review boards (IRB) at the investigator's study center and at Teachers College. IRB approvals were obtained and the research qualified as exempt.
4. Eligible participants for the study were identified by reviewing the list of faculty members on the study center website.
5. Faculty who met eligibility criteria to participate in the interview were contacted via email. The email communication requested their participation in the interview process and included a description of the study purpose (Appendix C).

6. Faculty members who agreed to the interview received another email with a link to an online scheduling platform (Doodle) and were asked to choose the date and time most convenient to them.
7. Semi-structured in-depth interviews were conducted using the previously designed interview protocols. Interviews were conducted face-to-face, on campus, and at times that were convenient to the participants. Informed consent documents were shared with participants at the start of the interview (Appendix D). All interviews were audio-recorded for subsequent analysis.
8. Audio recordings of the interviews were transcribed verbatim using an online transcription service.
9. Analysis and coding of the interview transcripts were done on Dedoose, an online qualitative data analysis platform. Coded excerpts are provided in Appendix Oa/b.
10. Executive summaries were completed for each interview and sent to the corresponding participant for their feedback and further comments. A sample is provided in Appendix P.

Table 2. Participants' Demographic Data as of April 2018

	Number of overall participants N=27 (%)	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Age *median (range)*	41.5 (36-65)	42 (37-65)	40.5 (36-65)	40 (37-54)
Years in practice				
Early career	8 (30%)	2 (14%)	2 (33%)	4 (57%)
Mid-career	13 (48%)	9 (64%)	2 (33%)	2 (29%)
Advanced career	6 (22%)	3 (21%)	2 (33%)	1 (14%)
Specialty				
Surgical	11 (41%)	5 (36%)	3 (50%)	3 (43%)
Hospital-based	8 (30%)	5 (36%)	2 (33%)	1 (14%)
Medical	8 (30%)	4 (29%)	1 (17%)	3 (43%)
Marital Status				
Married	23 (85%)	13 (93%)	4 (67%)	6 (86%)
Single (never married)	2 (7%)	1 (7%)	-	1 (14%)
Divorced	2 (7%)	-	2 (33%)	-
Parental Status				
Have children	19 (70%)	10 (71%)	4 (67%)	5 (71%)
No children	8 (30%)	4 (29%)	2 (33%)	2 (29%)
Dependent care (current)				
yes	16 (59%)	7 (50%)	4 (67%)	5 (71%)
No (includes no children)	11 (41%)	7 (50%)	2 (33%)	2 (29%)
Ethnicity				
Asian / Pacific Islander	7 (26%)	4 (29%)	1 (17%)	2 (29%)
Black/African American	2 (7%)	2 (14%)	-	-
Hispanic/Latina	1 (4%)	-	-	1 (14%)
White	15 (56%)	6 (43%)	5 (83%)	4 (57%)
Other	2 (7%)	2 (14%)	-	-

Methods for Data Collection

This study used in-depth interviews for data collection to explore the research questions. The choice of the qualitative method used was informed by a literature review

of the relevant topics. The literature review preceded and informed the research design, data collection, and analysis. Although literature review is not a data collection method, it was ongoing throughout the stages of the research.

Interviews, which were used as the method of data collection in this research, were conducted with 27 full-time women faculty in one large academic center.

Semi-structured, in-depth, one-on-one interviews were conducted with the participants to explore their perceptions of leadership positions, their perceptions about motivators, facilitators, challenges, and barriers to leadership, and their learning from the process and their experiences. All interviews were carried out face-to-face, ranging in duration from 36 to 103 minutes (average of 73 min.), conducted within the study center for the convenience of the prospective participants. With consent from the participants, all interviews were audio-recorded using a digital recorder. The researcher followed a "responsive interviewing" technique described by Rubin and Rubin (2012), where the researcher asks, listens, probes, and asks follow-up questions. This format emphasized the "conversational partnership" of the interview (p. 7) and used three main types of questions: open-ended, probing, and follow-up questions. The structure of the interview was defined by the open-ended core questions, which aimed to explore the research questions. Probing questions were used to "elicit more details" from the participants, while follow-up questions were used to explore new constructs that surfaced during the conversation (p. 120). The interview protocol was developed to answer the research questions, using a combination of open-ended questions, with either a broad or a focused scope. Three interview protocols were designed, each consisting of an introduction and four categories of core questions. The questions of the interview protocols were altered depending on participants, for women who are and those who are not in leadership positions, as described in Appendices Ea, Eb, and Ec.

The first category of questions was intended to explore what the participants perceived as characteristics of effective leadership in others and in themselves.

Perceptions of leadership in others were explored by asking participants to describe the perceived skills, attitudes, and attributes of leaders they considered effective. In addition, this first category of questions aimed to explore the participants' self-efficacy toward leadership by asking them to share the knowledge, skills, and attributes important for leadership they believe they possess.

The second and third categories of questions served to explore what participants perceived as facilitators to and rewards of, and as challenges to and drawbacks of leadership positions, respectively. The questions helped explore how participants view environmental, structural, situational, and motivational factors and how these factors promote or hinder achieving and maintaining a leadership position.

Finally, the fourth category of questions was intended to explore how and what participants perceived they have learned in seeking and attaining a leadership position. (Appendices Ea, Eb, and Ec).

Methods for Data Analysis

Interviews were recorded, and the audio-recordings were transcribed verbatim using rev.com, an online transcription service. Transcribed documents were reviewed for accuracy and completion. When needed, the researcher clarified sections by listening to the audio of the interviews. Throughout the data collection and analysis phases, memos and notes were taken to reflect the emerging insights. The memos were documented as entries in a research journal. They served to anchor thoughts and to document emerging ideas, as described by Saldaña (2009) in the preliminary or pre-coding phase.

Concurrently, before completion of all data collection, analysis of the collected data was started using Dedoose, an online platform for qualitative data organization and analysis. The conceptual framework served as a guide for developing codes, and for starting the exploration of the interview data (Appendices A and B). The choice of

Dedoose was based on the researcher's access to the platform and prior use. In the first cycle of coding, the researcher used a combination of elemental coding methods as described by Saldaña (2009), in particular structural, descriptive, and in-vivo coding methods. Structural coding methods were used to explore the interview data, using the framework of the research questions as a guide. The codes and categories in structural coding were derived from the researcher's conceptual framework. This allowed for an initial categorization of the interview data based on the preliminary conceptual framework, which is derived from the literature and from personal experience. In addition, a descriptive coding approach was used, as described by Saldaña, to capture emerging topics from the transcribed interviews. Descriptive codes were applied to passages to describe the topic addressed by the participants. In Vivo coding used the participant's own words when appropriate. It served to "honor the participant's voice" and their perceptions by noting and reporting participants' generated codes (p. 74). In addition, the researcher applied process coding to the data, as applicable, particularly in exploring the path to leadership for participants. Process coding, applying action gerunds to describe data, helps explore how events relevant to career advancement unfold over time, what were the involved steps, and whether there were any turning points. Value coding was also used with the interview data to explore participants' values, attitudes, and beliefs toward their roles in academic medicine and toward observed and ideal leadership characteristics (Saldaña, 2009). This helped the researcher understand the participants' perceptions of leadership in academic medicine, what they value, and what might have shaped their beliefs and attitudes. As cautioned by Saldaña, values coding is "values laden" and depends on the researcher's interpretation and value assignment of the codes (p. 93). Throughout the process, memos and notes were taken and linked to the excerpts, reflecting emerging and unanticipated themes. In addition, codes were added and/or modified in an iterative process throughout the study to reflect emerging themes and concepts. After the first cycle coding, the applied codes and their linked excerpts

were exported in a Microsoft Word document format for review. In this second cycle coding, pattern coding was conducted to reorganize the identified codes and their corresponding data in more meaningful and "parsimonious units of analysis" (p. 152). Accordingly, similar codes were grouped into larger categories, encompassing major themes and categories (Saldaña, 2009). The final version of the coding scheme used in the analysis of the data of this study is provided in Appendix B. Screenshots of the coding process are provided in Appendix Oa/b.

The codes were explored in relation to the collected descriptive and demographic data of the participants. These included the years of practice, specialty, marital status, dependent care, and leadership involvement. In addition, quantitative methods were used to explore code frequency, to determine which themes emerged and how often participants discussed them, and how these differed between those who are and those are not in leadership. In particular, results from descriptive coding methods are represented in tables and matrices, as described in Miles, Huberman, and Saldaña (2013). Matrix displays helped organize the data for the researcher and the reader, turning large portions of data from sequential narration to simultaneous display (Miles et al., 2013). Codes related to the conceptual framework and emerging from the first cycle coding were displayed and tabulated to contrast findings between participants, based primarily on presence or absence of a position of leadership, type of leadership when present, and years of practice as applicable. The findings are compared and contrasted between participants based primarily on whether they have or don't have leadership positions, and if present, on the type of leadership. Additional explorations were performed based on years of practice and on specialty, as appropriate.

To ensure reliability, portions of the transcribed interviews, along with the coding scheme, were shared with a peer physician who had completed a Medical Education Research Certificate and is familiar with the process of qualitative data analysis. In addition, the coding scheme and the conceptual framework used in this research were

shared with another peer physician for feedback. Both peer physicians requested clarifications of terms and concepts. After that, they both considered the coding scheme and the conceptual framework representative of their understanding of the research questions. In addition, to confirm validity of the interviews and the researcher's interpretation of the transcripts, an executive summary generated from each of the transcribed interviews was shared via email with the respective interviewee. This allowed the participants the opportunity to confirm the content of the interview, to provide additional information, or to offer clarification if needed. A sample of an executive summary is provided in Appendix P.

Literature on Methods

In exploring the research questions, a qualitative approach to this study unfolded using in-depth, semi structured interviews. The choice of qualitative methodology in exploring the research questions stems from an ontologic and epistemic inquiry of how women understand their career paths, how they perceive leadership positions, and what they have learned in the process. Quantitative methods employing the scientific method may be considered the gold standard for research in medicine and in some educational arenas (Seidman, 2006). However, qualitative methods are better suited for the proposed research questions in order to explore, in their own words, the meaning participants make of their experiences.

Seidman (2006) argues that in order to explore the meaning people make of their experiences, interviewing is a "necessary […] avenue of inquiry" (p. 11). Interviews are used in order to provide an in-depth understanding of the participants' views, experiences, and perceptions, and they are considered as "essential sources of case study information" (Yin, 2009, p. 106). As described by Seidman (2006), "at the root of in-depth interviewing is an interest in understanding the lived experience of other people

and the meaning they make of that experience" (p. 9). Interviews conducted as "guided conversations" (Yin, 2009) allowed the researcher to listen to participants stories, their perceptions and the "meaning they make" from their experiences (p. 106). Semi-structured interviews allowed the combined use of a set of well-defined questions, aimed to frame the research questions, and of prompts and follow-up questions to help explore participants' ideas further (Gill, Stewart, Treasure, & Chadwick, 2008). Accordingly, the conducted interviews provided both a "targeted" focus on the research questions and "insightful" exploration of the participants perceptions (Yin, 2009). Semi-structured interviews therefore allowed the researcher to "pursue" emerging information (Gill et al., 2008), beyond the original conceptual framework of the study.

Well-described pitfalls of interviews include inadvertent biases that can be the result of the questions' design, or of the interviewer's attitudes leading participants' answers (Yin, 2009). As "verbal reports," interviews can be subject to poor recall, poor articulation, and to bias (p. 118). Also, interviews are time-consuming to conduct and to analyze and may impose a logistic challenge to organize and coordinate with the participants' schedule (Seidman, 2006). In addition, Seidman raises the concern of "interviewing as exploitation" (p. 13), where the researcher uses the participants' words and candid sharing for the promotion of their own scholarly activity. The resulting "tension" (p. 13) should be acknowledged and should be channeled through a respectful use of the participants' words, leading to a better understanding of the problem and to the formulation of recommendations to help others.

Methods for Assuring Protection of Human Subjects/Ethical Considerations

To protect the study participants, issues of consent, voluntary participation, confidentiality, benefit, and protection from potential harm were incorporated in the design phase and during data collection, analysis, and reporting. A detailed description of

the proposal was submitted for review by the institutional review boards (IRB) of TC and of the study site. IRB approval was successfully obtained, and the research was qualified as exempt. Subjects were approached for participation in the study via email, the body of which is presented in Appendix C. A description of the planned research, of the interview process, and of the potential benefits for women faculty development programs were described in the email. Email recipients were also reminded that participation in the study was voluntary and that refusing to participate would not be associated with any repercussions.

All data collected from the interviews, including demographic data, audio-recordings, and transcribed interviews, were kept confidential and were de-identified. During data analysis, interview participants were assigned pseudonyms that were not shared with the participants or with others. When data were shared with others during the validation of coding or during the reporting of findings, all personally identifiable information was removed, and pseudonyms were used instead. Names and events mentioned by the participants were masked. Most importantly, the data were not and will not be shared with the faculty's supervisors or study center leadership. When feasible, the de-identified data were presented in aggregate form.

Electronic data were saved on a password-protected computer. Paper notes and documents were stored in a private office, under lock and key.

Issues of Trustworthiness

To ensure rigor and trustworthiness of this case study, a constructivist approach was proposed, describing construct validity, internal validity, external validity, and reliability (Gibbert & Ruigrok, 2010; Yin, 2009). In this approach, the researcher acknowledges that data collection and interpretation can be approached in various

methods that may influence the resulting knowledge. In contrast to a positivist approach, the role of the researcher is integral to the conduct and interpretation of the data.

Construct Validity

Construct validity refers to the "extent the study investigates what is claims to investigate" (Gibbert & Ruigrok, 2010, p. 712), and that it provides an accurate representation of reality. The concept of construct validity assumes the presence of an objective reality into which the research is tapping. Validity can be at risk when the participants' declared beliefs and their actual behaviors don't align (Byers & Wilcox, 1991). In order to achieve construct validity, triangulation was used in the exploration of the research questions by enlisting different participants with different profiles (Yin, 2009). In addition, the research methodology was detailed, providing a clear, step-wise approach to the research, from formulating questions through interpretation of results, including participants' selection and organizational characteristics (Gibbert & Ruigrok, 2010). This detailed description could help others reconstruct the research process from research questions to findings and served to clarify the planned and the actual methodology (Gibbert & Ruigrok, 2010; Yin, 2009).

Internal Validity

Internal validity refers to the degree that findings of the study are accurate and reflect the data without the influence of bias (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Given the researcher's role as a research instrument and to avoid bias, the researcher strived to be "responsive" to the collected data, rather than interpreting the findings through the lens of her own personal bias or preconceived ideas (Morse et al., 2002). This entailed an iterative process "at all stages of the research process" (p. 18) that started by gaining insights into the researcher's preexisting assumptions and continued throughout by strategically adapting the methods to the emerging data. In addition, this was further achieved by sharing with the participants an executive summary of their own

interview's transcript. This allowed participants to confirm the interview content and to provide additional information or clarification if needed. The conceptual framework served to anchor the data in the literature and helped guide the relation between variables (Gibbert & Ruigrok, 2010). Similarly, emerging patterns were identified and compared to previously described results (Gibbert & Ruigrok, 2010). Although a single data collection method was used, triangulation was sought to address the credibility or internal validity of the evidence (Yin, 2009). Triangulation was achieved by comparing the perspectives of participants with different profiles, including specialty affiliation and years of experience. Accordingly, the findings are the result of data obtained from interviews of participants with a range of characteristics and not based on specific single examples or "anecdotes" (Gibbert & Ruigrok, 2010).

External Validity

External validity refers to the generalizability of the findings of the case study to other contexts. The characteristics of the study site as a large, urban academic center may limit the applicability of the findings in settings that are markedly different. While this may limit statistical generalizability, it may not affect analytical generalizability where the data can serve to generalize from "empirical observations to theory, rather than a population" (Gibbert & Ruigrok, 2010, p. 714). The participants for the interviews were selected based on being or not being in a leadership position and based on their years of practice, and specialty, and are therefore best positioned to provide insight into the research questions (Morse et al., 2002).

Reliability

Reliability refers to the absence of random errors and entails that if the research methods were to be reproduced, they would result in the same findings (Chatterji, 2003; Morse et al., 2002). To ensure reliability, interviews were recorded and transcribed verbatim; coding was performed and checked by colleagues of the researcher, and the

findings were illustrated with excerpts from the conducted interviews (Seidman, 2006). In addition, the interview protocols were detailed and shared (Gibbert & Ruigrok, 2010).

Limitations

As suggested by Marshall and Rossman (1999), "no proposed research is without limitations" (p. 42). These limitations to the study can be present at different stages of the study, from the conceptual framework, to the formulation of research questions, to data collection and data analysis methods, and to reporting of results (Marshall & Rossman, 1999).

The first limitation is the implicit and explicit researcher's biases, which can influence the formulation of research questions and design of the study. As a woman physician with a leadership role in academic medicine, the researcher's personal experiences influenced the choice of the research topic and the framing of research questions. To mitigate their effect, the researcher explicitly explored her preexisting assumptions. To help externalize and reflect on those assumptions, the researcher maintained a learning journal throughout the research phases.

The second limitation relates to the generalizability of the research findings, given that the research was conducted in a single site, in the Northeast of the US. The research was limited to one site for accessibility and for feasibility. However, similar to the multicultural richness of the city, the study site attracts women faculty with different cultural backgrounds. The purposive sampling method used for interviews helped ensure fair representation of women faculty in the study, which increased generalizability of the findings (Barbour, 2001). Accordingly, this research was a field exploratory study using multi-case exploration within a single site.

The third limitation is the subjectivity in coding, during which the researcher's biases may have influenced the interpretation of participants' words. Multiple coding has

been suggested as a technique to minimize subjectivity and the influence of the researcher's biases (Barbour, 2001). The codes were established prior to starting the data collection, revised during collection and analysis, and reviewed after the first pass coding. The researcher enlisted independent peers to confirm the coding choices on portions of the transcribed interviews and to review and corroborate the coding scheme.

A fourth limitation relates to the selection bias that may have skewed the final sample. The participants in this study who opted to share their stories may have shared specific experiences that limit the generalizability of the findings to other women within the study center or to other women in academic medicine. Specifically, participants who chose to participate may have a prevailing opinion and may share common perceptions on the research topic and questions.

Finally, conducting interviews requires specific skills in which the researcher has received no training. This could have resulted in potential pitfalls, such as using leading or affirming questions, or misreading emotional or nonverbal cues. To mitigate this limitation, the researcher audio-recorded the sessions and maintained a verbatim transcript for easy and frequent reference.

Summary

In this chapter, a review of the research methodology was detailed. The purpose of this study was to explore the perceptions of leadership among women in academic medicine, comparing those who are and those are not in leadership positions. The researcher used a qualitative methodology of semi-structured in-depth interviews to explore what women faculty view as characteristics of effective leadership, what challenges and barriers they face, what motivates or facilitates a leadership trajectory, and how and what they learn on their leadership trajectories. Twenty-seven interviews were conducted with women across the different clinical specialties and with varying years of

experience as faculty. Throughout the research, issues of trustworthiness, validity, and reliability were considered. Limitations of the research design and scope were discussed.

Chapter IV

FINDINGS

This chapter discusses the four main findings of this study, which are described in relation to the research questions. These findings represent the themes that were gleaned from the in-depth interviews, conducted with twenty-seven women who are full-time faculty in one large academic center. Excerpts from the interviews are included in this chapter to illustrate and support the findings. First, participants' perceptions of leadership characteristics in academic medicine, whether ideal or observed, are described. Second, the experienced facilitators and challenges on the women physicians' paths to leadership are reported. This is followed by a description of perceived rewards and sacrifices, and finally how women, with and without leadership roles, approached learning on their career paths.

Accordingly, the main findings that emerged from the collected data are as follows:

1. When describing observed or ideal leadership characteristics in academic medicine, all participants discussed the importance of soft skills for the effectiveness of leaders, including interpersonal and communications skills.
2. Perceived and experienced challenges on a path to leadership are most commonly related to the work environment, especially gender issues. Facilitators of leadership are mostly structural, such as the presence of mentorship and sponsorship.

3. Making a difference and patient care were most frequently described by participants as the reward in a career path. Negative impact on personal wellness was often considered as a sacrifice of academic leadership.
4. All women discussed learning to navigate their career paths through informal ways of learning, such as learning on the job, from experience, and from professional networks.

The different findings are presented in this chapter and are supported by quotes from the participants. The following table describes the relevant characteristics of the participants along with their attributed pseudonyms.

Table 3. Participants' Pseudonyms and Relevant Demographic Characteristics

Pseudonyms		Years in practice	Marital Status	Parental Status	Dependent care responsibilities
Academic Leadership	Audrey	Mid-career	Married	Yes	Yes
	Daisy	Mid-career	Married	Yes	Yes
	Emily	Mid-career	Married	Yes	Yes
	Eva	Mid-career	Married	No	No
	Francis	Mid-career	Married	Yes	Yes
	Gladys	Advanced	Married	Yes	No
	Jane	Mid-career	Married	Yes	Yes
	Kate	Mid-career	Married	Yes	Yes
	Olivia	Advanced	Married	No	No
	Sarah	Advanced	Married	Yes	No
	Ursula	Early	Married	No	No
	Vera	Early	Single	No	No
	Xena	Mid-career	Married	Yes	Yes
	Zoe	Mid-career	Married	Yes	No
Hospital Leadership	Claire	Early	Divorced	Yes	Yes
	Diane	Advanced	Married	Yes	Yes
	Rachel	Early	Married	No	No
	Tania	Mid-Career	Married	Yes	Yes
	Walda	Mid-Career	Married	Yes	Yes
	Yolanda	Advanced	Divorced	Yes	No

Table 3 (continued)

Pseudonyms		Years in practice	Marital Status	Parental Status	Dependent care responsibilities
No Leadership	Beatrix	Advanced	Married	Yes	Yes
	Carla	Mid-career	Married	Yes	Yes
	Hannah	Early	Married	Yes	Yes
	Irene	Early	Married	Yes	Yes
	Mary	Mid-career	Married	Yes	Yes
	Nancy	Early	Single	No	No
	Patty	Early	Married	Yes	Yes

Finding #1

When describing observed or ideal leadership characteristics in academic medicine, all participants discussed the importance of soft skills for the effectiveness of leaders, including interpersonal and communications skills.

Participants in this research were asked to describe the characteristics exhibited by leaders in academic medicine, what characteristics they believe should be exhibited by effective leaders, and how they described their own approach to leadership.

All twenty-seven participants, whether discussing effective or ineffective leaders, discussed characteristics related to the soft skills of leadership in "managing people," especially interpersonal and communication skills, knowing the needs, caring for the people, and promoting their team and faculty members.

Additional characteristics were discussed by some of the participants. These included managing tasks, managing self, and personality attributes. Managing tasks included the financial aspect of the position, organization skills, and managerial tendencies. Managing self included having situational awareness, self-awareness and control, ethics and values.

The findings are summarized in Table 4 and a detailed distribution of the characteristics is provided in Appendix G.

Overall, the goal of leadership is in a nutshell, as described by Nancy, is "just to be able to organize people and move in one direction."

Table 4. Summary of Finding #1 – Perceptions of Leadership

Characteristics of Leadership	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Managing people	**27 (100%)**	**14 (100%)**	**6 (100%)**	**7 (100%)**
Caring	23 (85%)	11 (79%)	5 (83%)	7 (100%)
knowing	10 (35%)	4	2	4
caring	13 (48%)	6	3	4
mentoring	16 (59%)	9	3	4
Communicating	20 (74%)	12 (86%)	4 (67%)	4 (57%)
listening	13 (48%)	7	3	3
communicating	10 (37%)	5	3	2
Managing Tasks	**13 (48%)**	**5 (36%)**	**4 (67%)**	**4 (57%)**
Financial growth	4 (15%)	2	-	2
Management skills	6 (22%)	4	2	-
Organization skills	5 (18.5%)	1	2	2
Management of Self	**24 (89%)**	**13 (93%)**	**5 (83%)**	**6 (86%)**
Situational awareness	8 (30%)	3	2	3
Self-awareness/control	12 (44%)	9	1	2
Ethics and values	10 (37%)	5	2	3
Personality attributes	**19 (70%)**	**9 (64%)**	**4 (67%)**	**6 (86%)**

Management of People

All participants, regardless of their positions of leadership or their specialties, described characteristics of effective leadership that relate to managing people across different contexts. As Sarah put it succinctly and effectively, "the good ones are good to people." Conversely, absence of those characteristics indicated poor leadership skills. This led Audrey to comment that when leaders were poor managers of people, the people "flounder" and programs "fall apart."

Five main characteristics of effective leaders as managers of people emerged from the interviews: knowing the needs, caring, mentoring, listening, and communicating. These are further grouped into two main competencies related to the leaders' approach to people around them: caring and communicating.

Caring. Twenty-three of the participants (85%) described at least one element of caring for people in describing characteristics of effective leaders. The elements include: knowing, caring, and mentoring or acting for their people. Women in positions of academic leadership were more likely to describe mentoring characteristics of effective leaders, compared to other competencies, and compared to women in hospital or no leadership.

Ten of the participants (37%) described the importance for a leader to know the needs of the people they are managing. This is described by Audrey as "having the pulse for what's going on beneath," so that a leader can, according to Carla, "figure out what your people are going through and what the problems are and how to fix things." Such a leader is, according to Diane, "somebody who has a better handle on what people want and what they're working on." Thoughtfully, Hannah cautions that "you don't want him necessarily in your business all the time but I suppose it would be nice to know that the person who you're ultimately working for knows and appreciates what you're doing."

Thirteen participants (48%) discussed attributes consistent with caring. Claire notes that "being able to empathize with each level and having a very good idea of what the challenges are of each level is important." Nancy enthusiastically describes a current academic leader as "amazing because he actually cares a lot about his patients and his fellows."

Caring for the people means also "doing" for them by mentoring or sponsoring to help advance their careers. Sixteen of the participants, or 59% described this attribute when discussing effective leadership. In particular, nine or 64% of women in positions of academic leadership described the importance of mentoring. Emily, who is in a position

of academic leadership, described this competency as "helping people achieve their vision and seeing the quality of the people in your department and instead of putting them down, pulling them up." Similarly, Olivia describes a previous leader as "a very good leader in that he identified places for me to go." This also entails being a sponsor of their faculty, which, as defined by Jane, "good leaders should be good sponsors for those that they work with, meaning introducing them to people they need to meet, helping them make connections." For such leaders, the measure of their success is the success of their faculty. Describing a leader she held in high regard, Carla who doesn't hold an institutionally defined leadership role, reported that "he used to say, 'People graduate residents and fellows. I graduate chairmans.' Under him, 13 individuals became chairmen to departments."

Leaders who exhibit this competency are deliberate about exercising it and demonstrate it readily and repeatedly. Hannah describes her interaction with a leader as follows: "He's the only person who sits down, at least with me who's ever sat down and said 'Where are we going from here? Let's make a plan, let's meet every six months, let's get updates on what you're doing.'"

This in turn allows leaders to better support members of their team, to address their concerns, and to get their buy-in. Nancy comments that "if you're going to be a leader, you have to have buy-in from everybody else, so you need to understand what everybody else's concerns are and try to address them as well as you can." Mary cautions that caring may get in the way of effective leading, when "trying to please everybody."

Conversely, bad leaders are described as lacking this competency. Gladys summarizes the interrelation between knowing the needs, caring for the people, and helping them as follows:

> Bad leader doesn't really know what's going on in the department, or what they're leading, they don't know how people are feeling, they don't know the metrics of what's going on, and they don't know about how happy or unhappy their people would be. I think you need to know that to

> be able to sort of … you wanna grow the people, you want to grow the department.

Communicating. Twenty participants (74%) described elements of leadership consistent with communications. These can be categorized as either "listening" or verbalizing and "communicating." This category was most discussed by women in positions of academic leadership. Twelve or 86% of participants in positions of academic leadership discussed this competence, compared to 67% of those in hospital leadership and 57% of those without a leadership role.

Thirteen participants (48%) discussed how effective leaders demonstrate the characteristics of active listening. This finding was observed in similar proportions among participants regardless of leadership status or position. Listening is important because, as Xena describes, it helps "to make sure that people's voices were heard." It also ensures, according the Hannah, that the leaders "understand where the other person is coming from." Eva warns of the physicians' tendency to forget about listening when she said "I think sometimes as physicians we feel like we … we know it all, and that type of thing, and I think it's important to listen." Gladys similarly notes, "I think that you need to listen to the people who you're supposed to lead and you have to learn from them and you have to inspire them to be good at what you've hired them to do."

This listening and the resulting learning help leaders reach consensus and secure the involvement of their constituents. Xena observes in a leader that "he is someone who is very good at really listening to the vice chairs, and getting their involvement."

Usually, effective leaders demonstrate a genuine and clear intention to listen to those around them or as Daisy puts it to "show that you wanna hear if there's an issue." Similarly, Mary describes a leader who demonstrates deliberate listening and its effect on the group he is leading as follows: "he's one of those people who makes it very obvious that he's listening to you, because it's fun to speak up in those meetings and have a conversation with him." Also, Olivia describes this characteristic in another leader in the

following terms: “he’ll actually ask you what you think. He probably has a method to it, but it makes you feel like he really has an interest and he thinks you’re someone who can really think. You’re someone who is smart and someone who can contribute.” Rachel similarly describes the importance of listening to others for her own leadership development.

Ten of the participants or 37% describes the importance of verbal communications. As Sarah notes, “If they have an issue, they come right up front and say, ‘Listen, this is a problem.’”

When effective, communications allowed leaders to get the support they needed in their mission. Conversely, when ineffective, communication patterns were described in terms that ranged from absent to offensive. Several of the participants described instances of ineffective, absent, or poorly planned communications. When asked how often she talked to her chair to discuss career related matters, Carla responded: “Almost never. Only when he calls me to get something out of me.” The participants also described the effect of poor communications on the work environment and on their emotional wellbeing. Ursula describes having to navigate the workplace after her promotion led to discontent in the colleague she was replacing: “[The leader] said to her, ‘You’re done, we’re hiring someone else.’ […] There was a lot of just anger in the beginning of the transition, probably due to the manner in which it was handled.”

Audrey describes that a poorly planned communication from her leader led her to feel “manipulated” and that the situation was “unfair.”

Management of Tasks

Thirteen participants (48%) described leadership characteristics that related to the management of tasks. Overall, women with academic leadership positions were least likely to describe those characteristics (36% compared to 67% of HL and 57% of NL). With a few exceptions, a leadership that was focused on task management had negative

connotations. These can be grouped as focus on the financial growth of the unit or department, the style of approaching tasks, and the organizational skills of the leader.

Financial growth. Four participants (15%) acknowledged financial growth as an important expectation from leadership, because as Carla notes, "everyone wants a paycheck." However, she also notes that "I think there should be more focus on making sure people are developing careers than on money." Zoe also described ineffective leader in the following words: "[he] was more fixated on things like financial goals and other things like that rather than worrying about the patient care aspect and the development of the faculty." When asked about characteristics of effective leadership, Irene described the perceived dichotomy between a focus on finances and an interest in people:

> When you say, look, effective, it's like you're talking about a factory, like just making money. I'm sure they're effective in that way. But if you're talking about effective as inspiring change or aspiring to development of new leadership is, like, a different thing. So, I think I feel like a lot of leadership here is very good at production of dollar signs. But not really productive of mentoring young early investigators in some way.

Management skills. Six participants (22%), all of whom have leadership roles in the institution, discussed the management styles of leaders. When describing leaders' approach to managing tasks, a macromanaging approach was favored, because it provided autonomy and independence to the participants. Olivia describes an effective leader as "he gives you a lot of autonomy. Which for me, works. If what you're doing is working okay, he doesn't micromanage you, but if I go to him and tell him this is very important and I give him a good reason, he'll advocate."

Conversely, ineffective leaders tend to be micromanagers of tasks and people. Zoe notes about an ineffective leader that "he liked to control everybody and he couldn't let go of control and that was a problem." Claire recognizes the value of different styles of management depending on the level of expertise of the subordinate and shared the following: "he's a very micromanaging type boss, which is very good when I was a

junior attending, but as I'm becoming mid-level it's kind of ... I think it's harder on him than it is on me, because I just started doing things the way I want to."

Organization. Organizational skills were discussed by 5 participants (18.5%) in one of two settings. Some noted that the absence of organizational skills put a strain on the team. Olivia reports how lack of organization in a leader led to frustration because of ineffective meetings and decision-making process. Others noted that effective leaders were organized and that they aspired to develop their own organization skills. Tania says that organization traits are what she "thinks most highly of" in leaders. She reflects on her perception of the importance of organizational skills as follows: "maybe because I feel like I'm always striving towards organization. I don't know if I'm always as organized as a I'd like to be, so maybe that's why I value that as much."

Management of Self

Twenty-four or 89% of participants described characteristics of leadership consistent with management of self. This was evident in participants across leadership positions and status. The following categories were identified based on the conducted interviews: situational awareness, self-awareness and control, ethics and values, and personality attributes.

Situational awareness. Eight or approximately 30% of participants describe characteristics of situational awareness, or as Gladys describes it as "somebody who is in touch with what's going on in their department." In describing effective leaders, Diane affirms the value of being aware of the context as follow "he is somebody who knows what's happening. Not every minute, but knows in general what people are doing. I think that's the most effective leader."

Walda expands this definition to beyond the immediate unit or department of the leader and views it rather as "being able to take a sense of what's going on around you, what's going on above and below you, always having that context in how you

communicate decisions you make, how inclusive you are." The leader's awareness of context is akin to fitting the pieces of a puzzle, with the ultimate goal of the advancement of their unit. Nancy thus comments "he knows how all the pieces fit together and tries to make everything balance in terms of who should be doing what, and trying to look at the best of the division." Achieving this awareness seems to entail a deliberate search for information by the leader, which starts by listening and seeking feedback from various sources, in order to "stay in touch with what's going on," as described by Gladys.

Self-awareness and self-control. Twelve participants or 44% described characteristics of self-awareness and/or self-control. Nine of those participants hold academic leadership positions.

Mary and Patty, two participants without leadership positions, described this competency. When asked about characteristics of effective leaders, Patty offered "control" as valuable. When this was probed further, she qualified it as having control "of the situation, of their emotions, of other people's reactions." Similarly, Mary describes an effective leader as maintaining control of their emotions, their attitude and the situation: "he's just got so much poise and he's so quiet that he seems to be someone who basically is not going to spin themselves in circles and, like, not make progress because they're either saying too much or lose composure at one point or the other." She describes such a leader as "very rational, reasonable."

Being self-aware is different from being self-centered. Self-awareness implies a confidence in own competencies and abilities. By contrast, self-centered leaders focus on their projected image. Self-awareness and self-control stem from an empowering self-confidence as Sarah describes, "they are confident enough in themselves that they're not worried about what their staff is saying or not saying about them, or doing or not doing." Similarly, Emily describes this confidence as "doesn't get threatened […] by others and helps people achieve the things they want to and mentor them." On the other hand, Xena describes the self-centered leaders as they "seem to be most interested in how they are

perceived themselves, and how their success on their own is versus collaboratively as a group." Self-aware leaders may demonstrate their ability to take ownership of unintended complications, instead of blaming others. By contrast, Gladys warns that some self-centered leaders "when things go right, take the credit; when things go wrong blame your people." Emily also comments that "the leader has to remember his success is if everybody's successful under him."

These attributes of self-awareness and self-control help leaders effectively manage conflict "in a positive way" as described by Jane, and advance their agenda. Sarah notes that "being polite, being respectful of other people's opinions I think is a very good thing. It gets you a lot farther than screaming, and yelling, and pointing fingers and things like that."

Ethics and values. Ten or 37% of participants described characteristics of effective leaders relating to ethical traits and values. Three main characteristics emerged from the interviews: being trustworthy, transparent, and fair.

Being trustworthy meant that the leaders do no engage in retributions, give objective disinterested recommendations, and are accountable to their promises. Sarah notes that when a leader is trustworthy "you can say, 'I disagree with you completely on that,' and know that you're not gonna get shot." Claire describes a trusted leader as someone who's "not the type of person who would ever recommend something to me that wasn't in my better interest." On accountability, Jane describes it as an important characteristic: "I think probably the biggest thing is accountability. You say you're going to do something, and you do it. And if you don't do it, you say why you don't do it." Beatrix commends a leader for her accountability, saying "the thing that I liked about [female leader] that was very different than any of the other men I dealt with was total honesty, making a commitment and never changing that commitment, saying, 'I'm going to do this,' and she's going to do that."

Being transparent was often associated with being approachable, and with avoiding hierarchical stiff relations. Daisy points to "just being approachable and transparent," and Olivia describes some qualities of an effective leader as "he doesn't create a big hierarchy. Makes you feel very comfortable."

Fairness meant keeping an equal distance from the members of the group, avoid taking sides and avoid fomenting rifts in the division. Kate describes fairness as affording leaders a position of strength: "when you are leading a group and you do not take sides obviously that puts you in a very strong position." Gladys reported how a self-centered leader practiced dividing his people: "it wasn't a mean person, actually was quite nice, except he could only see how things related to him and he was a splitter of the members of his division."

Personality Attributes

Nineteen, or 70% of the participants, described characteristics of effective leaders that are related to personality attributes. Those who are not in positions of leadership were more likely to describe the relevance of personality attributes. Those attributes included being approachable, open, confident, and humble.

Diane comments on the importance of being approachable, and says that "somebody that sits in a chair and expects you to come to them is not in my opinion the best leader." Rather, she described an effective leader as being "very relatable and to me that's very important and I think that's important to a lot of people." Hannah also describes this characteristic in the following terms "you have to be open and friendly and have dialogues and understand where the other person is coming from."

Leaders who were described as being open were welcoming of other people's contributions, and of new ideas. This may manifest as having a clear vision for the group. When leaders didn't embrace change, they favored the status quo at the expense of growth and development. Vera describes a leader as "he wasn't a great leader for the

division to go forward and build and expand. He was very satisfied with status quo." Instead, Francis notes about visionary leaders that "you trusted their sense to predict what was coming down the pipe." Similarly, Olivia describes an effective leader as follows: "I always felt that he really did have a five- year plan, a ten-year plan." Effective leaders also took that vision and, according to Francis, engaged in "changing the department to or pivoting that department to be ready for the future they predicted." Being open to ideas means favoring collaboration over an autocratic rule. As Eva notes, "it's one of those things that to survive in academic academics, you can't be too autocratic because it doesn't work very well. I think you've got to have more of a collaborative approach." By contrast, Beatrix describes her experience with some leaders as "they're not open to other people's opinion. It's a kingdom. They're kings. When you question their majesties, they feel upset."

Confidence as a leadership attribute allows leaders to be effective at their job. Rachel describes a confident and effective leader as follows: "[she] is incredibly effective at getting stuff done. And I think part of it is her just unabashed self-confidence and, not bluntness, but basically, she knows what she wants, she knows what she does not want, and she will not get bullied into doing whatever things." Mary describes an effective leader as having a "unique personality" and being "fierce" and when asked to clarify, she says that she "sticks to her guns despite what other people, or what other even more respected or influential people think." This confidence is supported also by the clinical experiences and credibility. It is also mitigated by being humble, where successful leaders are described as by Irene as "very humble and always open to hearing anybody's thought process." Emily describes a successful leader as sharing the accolades with her team: "She's supportive to her faculty. She under-represents her work and over-represents her faculty's work."

Perceptions of Self as Leaders

Participants described their own leadership style and their approach to leadership along the same competencies of leader of people, tasks and self. In particular, the participants emphasized their people management skills, and described their personality attributes.

Knowing the needs of the group they are leading and being willing to listen to others are described as important for their success by a few of the women in leadership positions. Audrey describes herself as having "a little bit of a pulse for what's going on beneath" which in turns helps her to "get people to come along a little bit because that's just one of my strengths compared to some of the other, older men." Similarly, Rachel describes how listening to others has helped her in her position: "The people that I'm working with, having them feel like they have a say or that their voice matters has been incredibly helpful." Xena's comments echo those thoughts as she says "I started off as being listener, and I think I'm a collaborator. I want people to feel that they're involved in the process." Olivia says she a "big fan of being direct," which means people are "not always wondering what [she's] thinking." She continues to describe this as "I don't ever get the feeling that people are trying to figure me out. They'll just come up and talk to me."

Others, when asked to describe their approach to leadership or how they might be viewed as leaders, focused their responses on their personality traits. Those traits serve to approach leadership as a collaboration, for consensus and team building. Ursula, an early career faculty in a position of academic leadership, describes herself trying to be "friendly" and working on building a community and a team. Eva thinks that to be successful as a leader "you've got to have more of a collaborative approach." Walda similarly describes her leadership position as striving for the good of the collective group "realizing that the goal is not an individual one set for an individual but rather for the purpose of what we're doing or the program or the group of individuals." Despite not

having leadership positions, Mary described her approach to leadership as being "big on protecting my own," in order for her to foster "the best work environment for that group of people." Daisy recognizes the caring part in her personality. She also seems to apologize for having this trait: "my personality is more to have a connection. It's harder to… I can't turn off and be like, I'm not gonna have that caring part to it."

Olivia describes the prevailing perceptions of the expected behaviors of physicians as a "very macho thing" of working long hours. She strives in her leadership position to "change culture a little bit," because as she says, "I think a true [physician] is also a human being and someone who understands family and cares for their family, is willing to sometimes, to not go to work, and to do things that are personal." Her views have informed her leadership style. As a woman in leadership, she proclaims that "I always have thought that I don't want ever to feel like [women physicians] have to apologize for being a woman in medicine." She goes on to describe her future legacy along the same lines "I want to be a person who helped train a bunch of women who aren't apologetic […] That's all I want: to change culture a little bit."

Finding #2

Perceived and experienced challenges on a path to leadership are most commonly related to the work environment, especially gender-related issues. Facilitators of leadership are mostly structural, such as the presence of mentorship and sponsorship.

Participants were asked what they perceived as facilitators and challenges to achieving and maintaining leadership positions in academic medicine. The described experiences and observed factors were grouped according to the previously discussed framework. Environmental factors relate to the work environment, structural factors consist of the institutional and national resources available, situational refer to the personal life situation, motivational refer to outlook, mindset and desires.

Environmental Factors

Twenty-four participants (89%) described factors related to the environment in which they practice and in academic medicine in general. Overall, participants described the work environment in academic medicine as difficult for both men and women, a "harsh environment" according to Irene. Hannah notes that "the things that affect us affect all of us." All fourteen participants with academic leadership positions discussed variables related to the work environment during their interviews, compared to five (83%) of those with hospital-based leadership, and 5 (71%) of those without leadership positions.

Environmental factors are grouped in four main categories: culture, relations, gender bias, and gatekeeping. Factors related to culture include the difficulty of integrating the community of the medical center, as well as difficulty implementing change. Interpersonal relations are explored as challenges and facilitators on a career path. Gender bias refers to a range of observed or experienced behaviors attributed to presence of implicit or explicit bias. Gatekeeping relates to perceived exclusion of participants from specific circles. Summary of environmental factors are presented in Table 5 and Appendix H.

Culture. Eighteen participants or 67% described difficulty with the culture of the study center. Overall, those who are in leadership positions described factors related to workplace culture more often than those without leadership. Ursula describes the environment of the center as "very close knit." Audrey notes the "inbred" nature of the academic center, which, according to her, is a "huge, huge challenge." It's also a place that is difficult to navigate or understand, as Audrey notes "I didn't get the place at all. It took me so many years to understand this place."

Table 5. Summary of Finding #2 – Environmental Factors

Environmental Factors	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Culture	**18 (67%)**	**10 (71%)**	**4 (67%)**	**4 (57%)**
Integrating the culture	14 (52%)	8 (57%)	3 (50%)	3 (43%)
Changing the culture	9 (33%)	4 (29%)	3 (50%)	2 (29%)
Relations	**17 (63%)**	**9 (64%)**	**5 (83%)**	**3 (43%)**
Relations-challenges	16 (59%)	9 (64%)	5 (83%)	2 (29%)
Relations-facilitators	10 (37%)	5 (36%)	4 (67%)	1 (14%)
Gender issues	**19 (70%)**	**11 (79%)**	**4 (67%)**	**4 (57%)**
Female role models	10 (37%)	6 (43%)	1 (17%)	3 (43%)
Gender bias	17 (63%)	11(79%)	3 (50%)	3 (43%)
Harassment	3 (11%)	1 (7%)	1 (17%)	1 (14%)
Expectations	6 (22%)	5 (36%)	1 (17%)	-
Opportunities	15 (56%)	9 (64%)	3 (50%)	3 (43%)
Gatekeeping	**11 (41%)**	**5 (36%)**	**2 (33%)**	**4 (57%)**

Fourteen participants (52%) shared the difficulty of either integrating the community, or feeling like they belonged. Nine participants (33%) described the difficulty of changing the prevalent culture of the institution.

Integrating the community. Fourteen participants (52%) described issues related to integrating the community of the study center. Most of the participants who described difficulty assimilating within the culture of the study center attributed this challenge to having completed part or all of their training outside the study center, and joining the academic center as junior faculty. Audrey describes this transition as "very isolating" that she "was hardly even introduced to a single person." This meant "people didn't know who" she was, and that she "didn't even know who to go to for help." Claire describes joining the academic center as "a hard transition to first come here." Kate describes how, when she first joined the center, "it was a little difficult to be a part of the group and part of the conversation." One of the participants, who is also a foreign medical graduate,

describes the cultural barriers as follows: “people just don’t identify immediately. I don’t identify with them, and they don’t identify with me.”

According to Audrey, the individual departments in the medical center “have hired so few people from the outside, I think they just had no idea how to integrate somebody who really had not been here for any part of their training.” This in turn led some women to question their competence and how they were viewed. Francis describes the difficulties of joining what she calls “the big league,” and having, during her first few years, to “overcome new institution, new relationships, new [colleagues], new everything.” Francis points that her previous training “had not prepared me to be an attending here.” Ursula wonders whether having trained somewhere else, she’s “not thought of as being as accomplished” compared to those who had trained at the center. Vera acknowledges that her colleagues may have been “a little skeptical” of her methods when she first joined and “was new.” Audrey in turn shares that “as an outsider coming in, you want people to know you’re working hard and you’re competent.” This meant for Audrey “coming in super early, staying late.”

Being an outsider may also manifest as being a woman in a male-dominated field. Irene states that “I feel like I have to constantly prove that I’m the equal to my colleagues” with regards to her clinical and academic productivity.

Changing the culture. Nine participants (33%) described elements related to ability to change the culture in their work units or in the study center. Six of those participants had joined the study center as faculty, after completing their training elsewhere or in some cases, practicing in other academic centers. Participants perceived that there was a resistance to change in the medical center, which according to Eva is true of all large academic centers: “big academic medical institutions are going to be resistant to change.” Kate notes that people “don’t want to deviate from” what she describes as a “set mindset,” in a center that has “its own culture.” Similarly, according to Patty, “the culture and the process” are “ingrained.” Walda found it challenging to lead change

because “people are very stuck in their ways and irrational.” Tania, however attributes the difficulty in implementing change and “getting everyone to be on the same page” to being part of a “big team that’s spread out.” Zoe views both the advantages and disadvantage of her position, having “entered into an already established role with already established ways.” On the one hand, she notices that she “[didn’t] have to recreate the wheel,” while on the other hand she continues to say “you don’t get to create your own vision either.”

Relations. Overall, 17 participants (63%) described elements associated with relationships and their effects. Sixteen participants (59%) described relational challenges in the medical center either with peers or colleagues, or with administrative and support staff. On the other hand, ten of the participants (37%) described constructive relationships with colleagues who also acted as advocates.

Relations as challenges. Sixteen participants (59%) described challenges related to interpersonal relations in the workplace. This was defined as experienced or observed relations in academic medicine that were either described as challenging, or that may have had a negative impact on the participant and/or their career paths. Maintaining “healthy working relationship with everyone” can be challenging, according to Jane, because it “has to do with a lot of different personalities.”

Relational challenges with peers arise when there is a changing hierarchy or when there is conflict of interests. As Walda transitioned into a position of leadership, she recognized that she was the “youngest,” having to deal with colleagues with “very strong opinions.” She tried to accommodate by “trying to please everybody,” which was “definitely hard.” Likewise, Tania also experienced “a lot of confrontation with other members of my team, which I was not expecting.” She attributes these unanticipated difficulties to either her status or to her style: “It was pointed out to me that that could be because I am more junior to them. It could also be because my approach, or my style, is different than either what they were used to or what they respond well to.” Yolanda

reflects back on her experiences saying "they don't see you as somebody that should be influencing them." Sarah describes having experienced interactions with leaders that started with misaligned interests, escalated to a quiet conflict, and ended up on the back of her mind. She reports that she was told

> 'You did this, and this is what that did to me,' and they either hold it against you or give you the sense that it will be held against you, which turns out to be the same thing. It's like harassment. If you think that you're going to be harassed that's as bad as being harassed, really, because you can't function.

When conflict of interests arises, Carla cautions that "everybody, the way that they speak to me is self-serving. Nobody's going to tell me what they think I should do for me so I have to figure that out on my own." Similarly, Zoe keeps her career plans private because "I don't want to get stabbed in the back by other people who might be interested" in those opportunities. Recognizing discontent in colleagues, a leader tells Beatrix "we don't want to put your name on the door [of your new office], because people might get jealous." She also shares that "I didn't realize how much proving someone wrong, even though you didn't do it to hurt them, is a bad thing in this world."

In this world of academics are also administrative and support staff. Women are often met with resistance from administrative staff. Occasionally, like Ursula describes, "there isn't so much respect." When Audrey took on a leadership role, her relationship with the area manager changed because "she sort of resents the fact that I've gone from this to above her and have to control her and manage her a little bit and I think that's hard for her. It's definitely been hard for me." Zoe describes her own style as setting high expectations from her team, and not taking no for an answer, and was being told she was "being too hard." Claire on the other hand was told by an administrative member that "this is a lot of work me and maybe you should check with your boss first." Overall, Claire observes that in the administrative area "there's always gossip, and it's not always about me." Carla also believes that "you have to take everything with a grain of salt."

Difficult relations with colleagues and administrative staff may impose an emotional and psychological burden on the recipient. Zoe describes being a leader working with difficult colleagues as "difficult at times and it was a challenge, so I didn't love that role." When asked how she handled the conflict in her area, Claire answered "I did not handle it well. I just became a raging bitch for about six months to a year. Once they realized that was me, or at least the 'me' that it was then, they're lovely now, because they don't want to get that version of me." Yolanda, a participant with hospital leadership and with over sixteen years in practice (advanced career), notes that the lack of "respect" and emotional support at work "makes working hard."

In all those situations involving relational challenges, Claire notes that "it's usually harder with women. With guys, I think that they've been instructed long enough." In addition, as Ursula reflects "it's hard to be a leader as a woman too."

Finally, relations with trainees may potentially alter a career path. Three participants shared personal or observed experiences where negative feedback from trainees altered the career paths of the women involved. This meant either losing a leadership position, or a delay in achieving the desired promotion. Emily perceived that the negative feedback was misused as leverage by her direct supervisor who notified her, that based on the trainee feedback, she wasn't getting promoted: "I called him back and I said, 'You know I deserve it. Why?' He said, 'I wanted you to learn a lesson.'" While no "lessons" were intended in the experiences described by Sarah and Ursula, there were no attempts by the leadership to guide the women receiving the feedback on how to manage the relations and how to improve their performances. Sarah recalls feeling "quite distraught" when "I think I did it for about two years, and they said, 'All right, time for a change,' and I was removed from that position…" Carla, reflecting on the challenging relationships in her unit, says "If I ever leave this job it's because of that."

Relations as facilitators. Ten participants (37%) described the positive impact of interpersonal relations in the workplace. This was defined as having relations with other

colleagues, excluding leaders, that led to a positive impact on a career trajectory toward leadership. While several women described an overall collegial atmosphere in their areas of work, ten specifically described relations with colleagues as facilitating their advancement along a career path. Sarah described her own role as an advocate for a colleague seeking promotion, when she provided unprompted positive feedback that helped build their portfolio. Tania "was encouraged" by a colleague to pursue a leadership role, while Vera was recommended to her chief by an administrator to apply to a competitive training course. Irene's colleagues provided her with valuable information that helped her manage career and salary negotiations. When Walda's project was found "valuable" and "people responded to it," she was given more time to dedicate to her work and it "pushed her forward, that belief that that was valuable and worthy." It is a similar positive feedback that Ursula received from her trainees that "really motivated me to work with them and just continue to try to do a good job for them." Feedback for Audrey triggered a realization of the degree of her responsibility as the only woman in a leadership position in her unit, someone who a "junior person is looking up to."

Gender issues. Gender related issues were described by nineteen or 70% of the participants. In particular, 79% of women in positions of academic leadership discussed gender based-issues, compared to 67% of those with hospital leadership, and 57% of those without leadership. Based on the interviews, gender issues were categorized as lack of women role models and gender bias.

Several of the women who have faced challenged on their career path maintained a reflective stance on the cause of their struggles and are careful to not label all their challenges as gender-based. Claire says "When I say I've struggled, I don't know if that's because I was junior and the first junior person brought in from the outside, or if it's because I'm a woman, or if it's because I look young, or what it is." Emily similarly questions "Is it gender? Is it maybe I'm a little bit aggressive? Is it background? I don't know what it is." Moreover, some of the women shared how they don't want to be given

advantages based on their gender. Diane believes that "we should be gender neutral. I don't think we should be separating ourselves to gain equality." Xena acknowledges that she is perceived based on "what I look like on the outside," and that "someone might think that I'm a certain way just because I'm a woman." This, however, is not how she defines or views herself: "I don't usually think about those things until someone else forces me to think about them." She concludes that she would like to "find that balance", where she's "not one of the guys, but just that it doesn't matter." Rachel acknowledges that some surgeons "behave as though their gender is important" but she goes on to say "I think I assign those behaviors more to specialty than to gender." Ultimately, Yolanda thinks that while experiences of men and women are different in the workplace, that as a woman "you're probably better off in medicine than in some of these other places out there in the workforce."

Similarly, some of the described gender-based differences were the result of women's perceptions or self-imposed regulation. Audrey for example describes working hard to avoid any misperceptions and so "everyone knows [she's] working very hard."

Lack of women role models or support network. Ten participants (37%) discussed the paucity of women to act as role models, and the perceived lack of a support network for women in the institution. Irene wishes that "women in academic medicine" would demonstrate more "unity" to find opportunities, to offer a "pat on the back" for others who succeed. Beatrix thinks the problem is worse, that "women tend to turn on women" and this means that, as a woman, "you're very alone." Ursula similarly thinks that "women are bad at this. It's hard for other women to promote you." She says that "I think that's one of the problems we have, quite honestly, is that women are jealous of other women. And I don't think they necessarily like to see each other succeed so much."

Women are not open in the discussions of the challenges they face and of their experiences because, according to Kate, "you don't want to come across as a cry baby […] When you keep on repeating those things people just think that 'oh, this is a

complainer.' They stop taking your complaint seriously then." Similarly, Beatrix says "it's hard for women to know where to feel safe to have those conversations." However, she acknowledges that it is through the collective efforts that change can be made. Beatrix says "You do need the mass of women saying: 'Open that door.' I don't think we have a mass of women saying that." One reason for the lack of concerted efforts is that the problem may not be perceived equally and as urgently by all women in medicine. Junior women may not be aware of the challenges ahead. As Xena (midcareer, AL) noticed, "I also realize of myself that when I was a resident, it didn't occur to me at all. And I think it's because as I get more senior I realize that there's just fewer and fewer women in those [leadership] positions."

When Irene was asked about the characteristics of leaders in academic medicine, she quickly responded "there are so few women." Having few role models of women in advanced leadership positions has led some women, like Audrey, to question whether she will make it herself: "there's not that many women that have really kind of [made it]. For me I always feel like, am I gonna be the one of these handful of people that actually makes it up here?" Irene believes her career planning would benefit from having a woman role model or mentor "who has been through similar situations such as negotiations for a promotion or a raise." Xena believes the scarcity of women in leadership or with professor titles in her department may hinder recruitment efforts of trainees or junior faculty.

Furthermore, the problem of women's underrepresentation is not unique to the study center. Xena observes about the medical and surgical specialty societies that "there just aren't that many women if any. There have been entire meetings where all the faculty are men." The problem may even become worse for future generations. Young faculty starting on their career paths may want to turn for mentorship to women at the mid-career points of their careers. Irene believes there is a "big gap" at that level nationwide and she

notes that "leaders who are women right now are 60 or 70. When they retire, we have a whole 20 or 30-year gap where there's really like nobody!"

When women have achieved a position of leadership or influence, they have been able, like Olivia describes, to bring a different "perspective" to the table "that [the leadership team] didn't have […] I don't think sometimes they take into account what it's like to be a wife, mother, to try and run a practice, to have a husband." Women also inspire others to seek similar roles. Reflecting on her career path and leadership aspirations, Daisy recognizes a decanal position as "weirdly" more alluring than a chair position, and referring to the Vice Dean of the center who is a woman, she says "I can imagine doing [something like] that. Which is interesting, because it's who you see."

Gender bias. Seventeen participants (63%) have experienced or witnessed gender bias in the workplace. Gender bias manifested most commonly as implicit bias, and in three situations to perceived harassment. Gender bias can be pervasive and poorly recognized. As Zoe warns that people "they think of themselves and in particular New York City, 'I'm progressive, I respect everybody.' No, you don't. You think you do."

Harassment of women. Three participants, one from each of the three leadership stratification groups, described situations where they experienced harassment. Emily describes how a colleague "screams at" her in front of a patient and other colleagues. Claire relates experiences from earlier years during her training at another institution, where as a resident working "a lot of late nights," she has experienced "men say things that are inappropriate, or come on to me, and those kind of things." However, she dismisses those experiences as not "too big of a deal, just because I am such a strong personality, I've had no problems telling them where to go." In her current position, she describes an interaction with a male colleague who "no longer works here" who "would call me every night at 11:00 P.M. and yelled at me about something. […] When he'd get done yelling at me, he'd be like, 'You know, we should make up for this. How about I buy you lunch?' I was like, 'No! You're not buying me lunch!'" Beatrix approached her

chief asking for more resources while she was pregnant. She shares that he replied "We'll see. We'll see what happens after you come back, if you come back, with this baby."

Expectations from women. Six women, five of whom hold academic leadership positions, described feeling that they are kept to different standards than men, especially in communications. Daisy describes her perceptions of feeling that her inquiries about a promotion process may be negatively interpreted as a gender stereotype, being labeled as "anxious. Which is sort of like, 'women are anxious.'"

After being described as "too hard," Zoe wonders whether "if I were a guy, nobody would say I was being too hard on them for saying, 'Go back and try again till you get it right.'" Claire observes that "if I want anything done during [an emergency], I have to say 'please' and 'thank you.'" By contrast, she reports that men in similar situations just "go into a room and start barking out orders." Eve describes similar experiences using similar terms "when a guy walks down the hall he can bark out orders and no one thinks twice about it. Whereas if you're a female even if you're the […] chief you have to say 'oh your hair looks great! Can you go [do that procedure] when you get a chance?' I mean that's just […] the way it is." She goes on to qualify this that "you get penalized more when you're a woman than when you're a man." Claire describes how she and her boss are treated differently in their unit of work "When I see my boss just say, 'can I please have this?' And when I say, 'can I please have this?' Nobody listens to me. It just drives me crazy."

Having to uphold those behaviors takes a toll on the women, and as Claire describes "it does grate on you when it's a bad situation and you need to get people's attention." Audrey describes being mindful to monitor her behavior and communications to avoid feeding any misperceptions about her gender: "There's not many women [in area of work] and I'm the only one, really, with a seat at the table. I know for me that makes me always feel a little careful about everything I say and do because I think there's going to be a perception of a broadening of this is how a woman is acting." Women are also

held to different standards than men. Claire describes being advised by her boss telling her, that to be "respected" she had to avoid being "friends with ancillary staff."

Opportunities for women. Fifteen women (56%) reported a perceived difference in available opportunities based on gender. As Hannah puts it "somehow men often get offered things, women will never be offered anything." Despite having leadership positions, women in academic medicine were more likely to describe this challenge (64%), compared to those in hospital leadership (50%), and those without leadership positions (43%).

Differences in opportunities can be for example in term of physical resources. Carla describes having the smallest office of her work unit: "the people who left who were more junior to me, and they have nicer offices down the hallway when they were here." Irene similarly shares that the resources given to her male "co-worker was very different for me. Even though we both graduated at the same time and had the same credentials. He got an office. And it took me two years to get this office." Likewise, when one of her trainees was going to be hired to join the team, she found out that "the fact that I was teaching someone who was going to get hired that was going to get paid more than I was […], it was a real slap in the face, for someone who had been trying to pull her weight for so many years."

Kate shares that "sometimes I feel that had I been male I would have gotten more opportunities by now for sure." Tania wonders about the presence of gender bias in allocation of projects. Gladys had a similar impression, after unsuccessfully asking her leader for a title adjustment to reflect her position: "I thought that if a guy had wanted a title, it would've been given to him right away." When asked whether she felt male colleagues were more likely to ask for opportunities, she answered "more likely to ask or are more likely to just be asked."

Audrey similarly observes that a woman colleague has "had a much, much more hard time in terms of being given more work" than the "two or three young guys that

started around the same time that she did." Zoe echoes those feelings and says that "there's a lot of guys that I think subconsciously feel that a woman isn't doing as much as them, for whatever reason, that they're working harder." Similarly, Beatrix says "you'd still be hard pressed to find someone who had done what I've done in the [program] […] and yet I wasn't promoted." Xena wonders whether some of those differences in opportunities are related to the willingness of men to ask more. She says "if I were a different person, maybe a guy […] if I would've asked for more stuff then maybe I could've gotten more. I don't know. But then I also think it doesn't really matter to think that way."

In some situations, women have been actively denied opportunities for advancing their careers because of their gender either from colleagues or from patients. Irene describes being resisted by her male colleagues "tooth and nail" for suggesting a woman as a collaborator on a major project. She continues saying "They didn't want a woman as a collaborator […] And by the end of the [project], it was the two of us that was working the most." The combination of gender and race places women at further disadvantage. Zoe describes her experience with some patients as follows:

> I have had a couple patients that, no question about it, and it might be both my gender and my minority status where they've come in to see me and they took one look at me and realized I was a minority female and they were quick to want to leave the room.

Carla is frustrated with some conclusions people have drawn about inequities among men and women. She refers to podcasts that discuss the "pay gap between women and men." She thinks "it may appear that women are not choosing leadership positions because they don't want it," or that women are choosing companies with "flexible hours." However, she believes that "discrimination" by organizations against women forces women to "get marginalized into these no-name law firms." She concludes "It's not a pay gap, it's an opportunity gap."

This may be further amplified by what Zoe and Ursula describe in their respective units as women's tendency to do more non-quantifiable work that goes unnoticed and unrewarded. Zoe describes them as "these soft things that a lot of us women do more commonly than men because a lot of my guy colleagues are just like, 'I'm not seeing that consult, forget that.'"

Women also feel left out of the "boys' club" as Claire shares. She describes the experience of a colleague at a different center whose men work colleagues "would literally have bourbon parties she wasn't invited to." Hannah similarly describes this dynamic. She quotes and agrees with the conclusions that were presented at a conference on women in medicine, that women "couldn't advance and they felt like even when they did try they couldn't because it was still sort of an old boys club."

Women also experience resistance to having their voices heard. Kate describes how "when I'm in a meeting and there are a couple people, when I make a comment and some guy make a comment, guy's comments are always taken more seriously than mine. Mine are not only discarded, but they're kind of frowned upon." However, that doesn't stop her from making her point: "I felt very disturbed about in the beginning, but now I know that that's how it is. I don't care now, I still have to put my point." Walda also describes sitting in meetings where "another male leader repeats exactly what I just said, exactly what I've just said and claims my idea for them. These are behaviors that you see all the time." Conversely, Vera describes how a previous leader "was viewed well as a leader by the [trainees] because he was an older man. That's one thing that helped him: he had a commanding presence, so I think that they didn't see that he was flawed […] as a leader."

Another shared experienced was being called by their first names, instead of their titles. Claire describes how "the fellows call me by my first name," while addressing her male colleague as "doctor." Audrey describes a similar situation where a woman from an administrative office in the study center "she's sitting with all of us there and she says,

‘[…] I’m going to organize a dinner for some donor.’ And she goes around the room and she goes, "Doctor X, Doctor Y, Doctor Z, and [Audrey].’ And I was just like, ‘Are you […] kidding me?’” She also describes similar experiences within her department: “that happens to me all the time over email too. I mean I had an administrative assistant: ‘Doctor A, Doctor B and [Audrey], can you give me your availability?’ Did I miss something? Did I not graduate from med school too?” Walda, the second in command in her work unit, was assumed to be the personal assistant to her direct boss, and was addressed by her first name in an email requesting her to set-up a meeting with “the doctor.” Her boss tactfully rectified the misunderstanding. Vera describes sitting in a meeting with her boss and a health care worker and “someone was calling in on the phone and the [health care worker] said ‘Hi so and so, I'm here with Doctor X’ who’s the male chief […] And he didn’t even say my name! And thankfully my chief was like ‘and Doctor [Vera’s last name]’” Vera attributes this incident to “the gender thing,” because “it had to have been, there’s no other reason not to say my name or to acknowledge that I was there.” Claire recognizes that even if this seems benign, “but that happens a thousand times a month, something little like that. It does grate on you after a while. I can’t say it’s the hardest thing. But I can say it’s the thing that’s most annoying.” Audrey similarly describes it as “that kind of stuff, it just gets so exhausting.”

An additional layer to the problem is that these issues are not recognized by the colleagues and supervisors who are men. When Claire reported some of the challenges she has experienced to her leaders who are men, “they don’t really get. They’ll be like, ‘Well, it’s just [the academic center]. This is how [the academic center] is.’” Audrey laments that none of her colleagues notices when discrimination happens, like being called by her first name, instead of her title: “One of the men could have said something but they probably didn’t even realize, you know?” In addition, her own approach had been accommodating to these perceived biases: “I think first you end up acting like they don’t exist and you’re just trying to work and get through, and I don’t think that’s good

because then, when you come on the other end of that, I think often you feel resentful and I think there has to be an acknowledgement in the medical center that there is a problem, right?"

In response to these biases, Claire says "I've just decided I don't need to be liked. But it makes it lonely to work here." Eva takes a more moderate approach and makes sure that, "whenever I come to work I'm dressed so I can be taken seriously." She thinks that "you don't dress for the job you have, you dress for the job you want." Audrey evaluates her options of speaking out or not and describes it as a "It's a lose-lose. If I say something I'm being a jerk and overly sensitive."

Beatrix has hope:

> I think we've benefited from the #MeToo, and I think it's going to happen. I think they're going to benefit from it. There's capable people behind me, strong women. There's less women who say, 'Can we just do what we're supposed to do?' I don't hear that anymore. Many of my equal colleagues would say, 'Just do what they said.' They don't: the young people, they don't say that. They come to it, 'What can I do?' There's energy.

Gatekeeping. Gatekeeping is defined in this study as the process of preventing the access of women to positions of power or leadership by those who hold the positions of power. Eleven participants, or 41% described experiences consistent with gatekeeping. This was distributed as follows: 36% of those in academic leadership, 33% of those in hospital leadership, and 57% of those without leadership. Ursula through her observations offers an alternate description of the term. She says: "there's definitely some favorites and non-favorites. I'm not a non-favorite, but I'm not a favorite. There's a lot of that that goes on too." Kate experienced being passed over for promotion in favor of a man colleague, with equal qualifications. From her conversations with other women, she believes this is a common experience: "that women are not being given equal opportunities here like men." Irene also describes that gatekeeping can delay women's promotion because those in "the department leadership" are more likely to "think of a

man's name" first. When asked who gets promoted around her, Emily replied "the people that the chair chooses, literally." She observes about a leader that "he likes to promote his people, the people he brought in." Audrey describes the environment of the medical center as very "male centric," and she notes "there's pictures of white guys all over the place in all the conference rooms."

Gatekeeping beyond the medical center was also explored. Beatrix notes that the academic world is small, especially related to individual specialties, which means that "there's also a bunch of men that are friends with a bunch of men who are also in charge of you." This in her opinion limits one's ability to advance or ability to change institutions freely. Similarly, medical societies are led by a few men in power. Sarah had trouble making her way on the national committee because the person in charge of the committee was looking for a "big name person."

Irene wonders how, at the major national society meetings, "how can most of the panelists or session chairs are like men? It's most of it." Xena describes that at the national society level, "it does become obvious that there's only this certain group of people who try to become the leaders." She goes on to say "I don't think it's necessarily something that's conscious. It's just that people surround themselves with people that they know." This means that the same people get invited for speaking engagements, which further "perpetuates the problem, which is that you invite faculty to speak because they've spoken before and they were good at it. And it's always the same names. It's the same people." In her opinion, this is important because "if you miss out on hearing female voices on things, then you're missing out on a significant part of who your patients are."

To break through gatekeeping, Xena had been told that "'Well, […] you go get yourselves in leadership positions' and things like that, which I think misses part of the point is that it's not for… in a lot of times, it's not for lack of trying, but it's hitting up

against a wall." A difference she notes is that overall, "men encourage each other" to pursue leadership or speaking engagements.

Gatekeeping may not be consciously initiated, but it is easily perpetuated, and may require active intervention by those in power to break the cycle. As Xena notes that the "white men" in power need to deliberately recognize that "we're the ones in power, and unless we're really active, and convinced and everything, in helping encouraging other people, then it's just not going to happen."

Diane disagrees with the concept of "that gender diversity hires, that sort of thing. I think I bristle at that. I think you should hire whoever you want to hire, regardless. Whoever you think is best for the job, regardless." Emily argues that it shouldn't be about favoritism but about qualifications: "we don't ask you to invite us as women because we're women. We're asking you to invite us as women, because we are women and we've done the work." Beatrix notes that ultimately, transparency of processes is what's needed to achieve equity:

> I think we need more transparency to get to equity. I think that, for men and for women, this is an insular place. People make decisions, a small group of people make decisions that are not always meritorious. There's a lot of subjective decisions, so we don't always pick leaders who have the best qualifications.

Structural Factors

Structural factors of an organization refer to infrastructural elements that can affect a career path. Guided by the conceptual framework, two main themes emerged from the interviews related to structural factors in the organization: factors that affected getting the work done, and factors that influence progression on career paths. Factors that affected getting the work done included: resources (time and work schedules, support personnel, equipment and offices, processes and bureaucracy), and financial factors (pay and compensation, and productivity expectations). Factors that influence progressions on career paths included faculty development activities (mentorship and sponsorship,

networks, access to leaders), portfolio development (committees and titles, leading without titles, token appointments), and promotions. Finally, transparency is discussed in relation to processes within the institution. The themes and their underlying elements are detailed in table 6 and in Appendix I.

The majority of participants, regardless of presence or absence of leadership positions, discussed elements related to the available resources in the organization. The work schedules and lack of available time were the most frequently cited factors. This was followed by the perceived absence of personnel, either as colleagues in busy work units, or as administrative and support staff.

All participants described the presence of structural factors that influenced their career advancement, either as facilitators or as challenges. The most commonly cited factor was the presence or absence of mentors and sponsors. Women in academic leadership were more likely to report absence of mentors (79%), while women in hospital leadership were more likely to discuss presence of mentors (83%). Having a rapport with and access to their leaders were often cited by participants as facilitators on their career paths. The effect of serving on committees and having leadership titles were more often discussed by women in academic leadership. The process and outcomes of promotions were least likely discussed by women in hospital leadership. Among the three groups of participants, women without positions of leadership were the most likely to discuss issues of transparency (57%).

Resources in the workplace. Overall, twenty-six participants (96%) discussed factors related to resources present in the workplace. The different resources that were cited may fall under the purview of either the university or the hospital. Some areas of the study center were described by participants as "not having enough resources" as Nancy describes, or as Carla says "absolutely no infrastructure" for conducting their clinical or research activities. Encouraged to explore a "strategic plan" for her future aspirations,

Jane recognizes that "really the support to carry out the plan may be challenging, whether that's administrative support […] or how much time you have to invest in a project."

Table 6. Summary of Finding #2 – Structural Factors

Structural Factors	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
GETTING THE WORK DONE				
Resources	**26 (96%)**	**13 (93%)**	**6 (100%)**	**7 (100%)**
Time & Schedules	15 (56%)	8 (57%)	3 (50%)	4 (57%)
Personnel	12 (44%)	7 (50%)	1 (17%)	4 (57%)
Equipment & Offices	11 (41%)	5 (36%)	3 (50%)	3 (43%)
Bureaucracy	10 (37%)	6 (43%)	1 (17%)	3 (43%)
Financial	**12 (44%)**	**6 (43%)**	**2 (33%)**	**4 (57%)**
Pay & Compensation	6 (22%)	4 (29%)	1 (17%)	1 (14%)
Productivity expectations	10 (37%)	5 (36%)	1 (17%)	4 (57%)
CAREER ADVANCEMENT				
Faculty Development	**27 (100%)**	**14 (100%)**	**6 (100%)**	**7 (100%)**
Mentors/Sponsors	25 (93%)	13 (93%)	6 (100%)	6 (86%)
Presence - Facilitator	18 (67%)	9 (64%)	5 (83%)	4 (57%)
Absence - Challenge	15 (56%)	11 (79%)	1 (17%)	3 (43%)
Networks	7 (26%)	4 (29%)	2 (33%)	1 (14%)
Access to leaders	16 (59%)	9 (64%)	4 (67%)	3 (43%)
Portfolio Development	**22 (81%)**	**13 (93%)**	**5 (83%)**	**4 (57%)**
Committees /Titles	15 (56%)	9 (64%)	3 (50%)	3 (43%)
Leading w/o titles	7 (26%)	5 (36%)	2 (33%)	-
Token appointments	8 (30%)	5 (36%)	1 (17%)	2 (29%)
Promotions	**13 (48%)**	**8 (57%)**	**1 (17%)**	**4 (57%)**
Transparency	**9 (33%)**	**3 (21%)**	**2 (33%)**	**4 (57%)**

Time and work schedules. Fifteen participants (56%) discussed factors related to time and to their work schedules. Lack of time, a challenge on a career path, was equally

likely to be described by women, regardless of leadership position or status. It is often the results of competing demands and inefficient systems.

Often, lack of time means women are less likely to pursue paths toward leadership. Asked whether she would be interested in participating in advanced learning opportunities for her career development, Claire says "to tell you the truth, as a 100% clinical [physician], I don't think I would have time to." Similarly, Nancy is "hesitant to take on more leadership roles" because of her current time allotment. Francis also describes her inability to engage with a major project because as she says "you need time, and space, and creativity. The time to think and generate new ideas." Mary is also reluctant to take on any more opportunities because she says "I don't have time." She's worried that she "would drop the ball."

Similarly, increasing leadership responsibilities and commitments impose a challenge on women for prioritizing and organizing. Daisy has experienced a time crunch, especially as her leadership roles increased, and she describes that "my day is filled with meetings and so then that's hard to actually get any work done." Similarly, when time constraints arise, Jane describes how she chooses to disengage from the activities she once enjoyed, opting "as things have gotten busier," to not be "as involved." She goes on to describe that "it gets to a point, though, of I did like being involved with that, but when committee starts to become lots of meetings and all these things, it becomes difficult and I sort of have to pick and choose which things to become as involved with."

Time was described not only as its availability, but also in terms of its management. Hannah describes having "said yes to everything because you never know where it leads," but instead of finding her "own niche" she is "doing all this other nonsense." She concludes "I think I'm wasting time that I could be using better." Rachel describes time management as the biggest challenge as she juggles different projects "how to do all the stuff that I want to do at the level of quality that I want to do it at, and

not just drop stuff left and right. That's for me has been the hardest part." To accommodate those demands, she has been doing more work on "my own time," "squeezing in" different activities at different parts of the day. Yolanda recognizes that "finding the time to do all of the work that's required" for the committee is challenging, "because it involves reading a lot of protocols. It involves meeting with a number of people from time to time." She ends up using her personal time, on "evening and weekends" to complete the work.

Likewise, work schedules that are busy, inflexible or inefficient were described as a challenge to the participants in pursuing career advancement.

Busy schedules are often the result of a busy clinical practice. Mary does not envision engaging in administrative positions because of the work schedule "it just doesn't work with my clinical volume right now in any capacity. So, I'd have to lose clinical volume which I love right now." She continues to emphasize "I really hope we can hire another person, because it's too busy right now. And the burnout rate, it's gonna be high." The burnout is due, in her opinion to the busy clinical schedule and "no downtime during the day. We're losing flexibility for when we can take off or vacations and stuff just because a lack of coverage." Asked about engaging or pursuing leadership roles, Hannah shares that she is "clinically working too much to be able to really do anything else effectively." She notes that "having a more efficient work environment like, that's not a woman's thing," but would benefit everyone in the workplace. Vera, who is an academic leadership position and is in the early stages of her career, is also feeling overwhelmed to the point of "burnout" with the clinical load that prevents her from engaging in other activities. She feels "mostly bogged down with clinical work" and she says "I feel like I'm always catching up, I'm reacting rather than acting." Similarly, Audrey reports doing "like a lot of things, and I don't like giving anything up and that's what makes it a real challenge. But then the negative side of that is you just start to feel

really burned out and you can't do everything!" Xena's work on the other hand is dependent on other specialties, and this limits her ability to control her own schedule.

Busy schedules are also the result of the system's inefficiencies. Women in surgical specialties are dependent on the operating room administration for efficient time usage, and for avoiding case delays or "being bumped." This gives one woman in a surgical specialty a sense of "lack of control over my hours, over my cases." These inefficiencies and "the amount of time we sit around waiting for a turnaround" between two cases are described by one participant in the surgical field as "painful."

Flexibility in the workplace can be fostered by leaders. Gladys says that "I've always been a strong supporter that if people want to work part-time they should be allowed to, because there are times when you want to step away, times when you want to become more involved." Olivia differentiates between part-time and flexible time. Flexible time allows full-time members of the work unit to work according to their own schedule or as she describes "it's different times. It's alternative time, but it's not part-time." Ursula similarly points out that time lost on her commute varies at different times during the day. Having a flexibility of the start-time for her work day could save her time during the commute. Asked about what the organization could do to help her move to the next step in her career, Francis replies "flexibility and more autonomy in scheduling. Creative ways to be full-time faculty and just working 80%" instead of the current offering because, according to Francis, "the current part-time status, part-time offering, is punitive." Similarly, a flexible arrangement means for Daisy that she can occasionally work from home, especially if her day is "all phone meetings." She is aware that may not be easy as she becomes more involved in leadership roles, and that "when you start taking an administrative role," then "people are looking." Ursula similarly feels "lucky I have my [administrative] day, which I'm still expected to be here for, but that's a day of flexibility."

Personnel. Twelve participants (44%) cited factors describing the need for more personnel, either as colleagues in the work unit, or as administrative and support staff. The need for such support was mentioned more frequently by those in academic leadership and those without leadership positions.

Having adequate support staff means for Xena that they "would actually free me up to be able to be a more effective leader. Those didn't come with the title, and so I had to push for those things." Similarly, for Zoe, "when we have that kind of help and I'm not spending my evenings returning phone calls to patients, which is what I'm doing right now, 9 o'clock at night." Mary's work unit faces a push-back to hiring much needed colleagues: "we all know we need to hire somebody and they're telling us that there's not enough money." Audrey empathizes with her boss, describing that it was "very unfair" for him to maintain his clinical load, while taking on leadership positions when "he never had anybody to help him." It was this same leader who offered to support the salary of a research assistant when she needed it to complete her work.

Having reliable administrative support relieves physicians from a large burden. Walda describes that the administrative assistant "has definitely taken off a lot of the assisting things that I was shouldering for a long time." Vera notes the clinical work and the long hours can be mitigated if additional colleagues and support staff were hired: "I've told my administrator, I told my [direct leader] I'm burning out, I can't… I need help."

Offices and equipment. Eleven participants (41%) described the need for office space, or equipment. Several women (Carla, Irene, Beatrix, Claire, Tania, and Emily) brought up lack of office space as a challenge, whether to hold meetings, to work on academic projects, or to have a private space during the busy clinical days. Carla had to negotiate with her leader to keep her office after "they tried to take my office away which is, as you can see, like a shoebox." Diane describes "struggling a little bit" with the outdates computers in their offices. Ursula also points to technological issues preventing

the streamlining of the workflow, saying "just the lapses in technology quite honestly make it really difficult to talk about any form of efficiency on the administrative side of things."

Bureaucracy. Ten of the participants, or 37%, described the frustration of dealing with bureaucracy, perceived as a challenge to getting the work done. Jane describes part of her role as "paperwork." Eva recognizes that large institutions have an inherent challenge of dealing with "bureaucracy," and that "infrastructure" is also something else that "academic medical centers struggle with." She accepts that this means that "in order to get things done, […] it's going to take you a little bit longer and take a little bit more effort." However, this may make leadership less appealing to some. Jane feels "it's an uphill battle," working to influence "where decisions are made about purchasing, and then the orders don't come through." When asked what positions of leadership could be interesting for her to pursue, Patty says that "there is so much […] all these levels of bureaucracy" between the academic center, the hospital, and the interactions between physicians and nurses. Mary explains that the two entities, university and hospital, "they're completely disconnected, they're totally different." Diane describes as "most challenging part" of her leadership position was when the academic center "would get in to the mix with contractual renegotiations." She thinks this was the result of their respective objectives: "their goals were probably a little bit different than mine. They just wanted more money…always…And I wanted something fair."

At the microlevel, Kate experienced frustrating delays in getting an innovative change approved, having to go across layers within the system. She described this as "absurd, because it's a minor thing and it should be done within an hour." Overall, resources seem to be managed by non-physician administrators. When Irene was asked how she has approached the perceived lack of resources, she says that her inquiries are dismissed and "they put an administrator to put a stop to it, to just say: 'no, we're not going to give you anything.'" Mary similarly described that, in her area of work, salary

negotiations were channeled through a hospital administrator and "he's in charge of the money."

Finally, "dealing with insurance" companies as Vera notes "trying to argue why this person needs this medication and talking to a peer at the insurance," is also adding to the challenges of her clinical work.

Financial factors. Twelve participants (44%) discussed financial factors related to the pay structure and reimbursement. When financial factors were discussed, they were framed as challenging. However, overall, financial factors were not perceived as hindering the advancement of women along their career paths.

Pay and compensation packages. Six participants (22%) discussed issues related to pay and compensation packages, in the setting of discussing career advancement and leadership in academic medicine. When Audrey accepted her leadership position, she notes that "with that job though […] came a title but there was no salary support of any kind." Carla is aware that in her work unit there are salary discrepancies, where members of the unit "get a base salary. I don't know how that's determined and it's not the same between each person." Walda, who is "privy to a lot of information," is aware that others may be paid more. Overall however, she says "I don't think that I'm unfairly paid." Furthermore, she follows her husband's advice to "'just forget about comparison." Instead he urges her "just ask yourself, do we have enough?" To which she says "the answer's always been yes."

Irene acknowledges salary discrepancy is an issue, however the problem goes beyond salary and includes compensation packages. These are the incentives that men and women, especially those engaged in research, are given in academic medicine which according to Irene are designed "to start your career, […], and that includes space, staff, finances for equipment. Very simple stuff. Along with salary and opportunities for promotion." Quoting the results of an online search she had performed, she says "I think it's known nationally that women's offering packages are less than men." The disparity

extends beyond gender when the compensation packages are used as recruitment tools. Irene notes that "when they recruit faculty from the outside with [national grant] funding, they give so much more than the people that they cultivate from the inside."

Productivity expectations. Ten of the participants or 37% of all participants discussed the impact of productivity expectations on their career paths. 57% of those without leadership positions All participants who discussed productivity expectations referred to the term of RVU, or Revenue Value Unit, which is the most commonly used measure of value of physician services in the United States. Zoe says she wishes she would "never have to worry about finances." She explains the perceived importance of financial productivity that often "we base value of a doctor on what shows up on a spreadsheet right now, and not on other things, and that's a problem." Zoe shares that some of the work done by physicians may not be captured for reimbursement, and yet it provides a service to the hospital and to the patients. Irene describes this as "being a good citizen," which is "good but […] nothing to give you a leadership in academics," because she thinks that "at the end of the day, it seems like all they look at is dollar sign, how much you bring in."

Walda, who is in a position of hospital leadership, has a different opinion, and she thinks that using RVU as an objective measure helps avoid unnecessary "drama." She does value those other aspects of a physician's work and says "I do appreciate that work is not just dollars brought in by patients you see, or grants that you bring in." Similar to Zoe, Walda wonders about having "a more objective way of assessing" the value of those other aspects. Ursula knows that the RVU of each physician in her unit are reviewed, even though that information is not shared with the physicians and she says "I don't actually know how many RVUs I produce." Irene describes that, being pulled in all directions, as a clinician, educator and researcher, "I think I'm seen more of a jack of all trades and a master of none." She thinks that her department and the hospital may

"unfortunately" perceive her academic and research focus "as a detractor" from potential clinical productivity.

Faculty development opportunities/challenges. All 27 participants described factors related to faculty development, specifically as presence or absence of mentoring and sponsorship, the importance of professional networks for their career development, and the importance of having access to leaders.

Mentoring/sponsoring. Eighteen participants (67%) described the beneficial presence of mentoring that facilitated their career path. Fifteen participants (56%) discussed the challenges of absent mentoring and sponsorship. Women with leadership positions in academic medicine (79%) were more likely to describe absence of mentorship as a challenge for their career advancement, compared to those in hospital leadership (14%) and those without leadership positions (43%).

Kate describes the difficulty of advancing along a career path without mentorship as "start from […] scratch," with no support for "introducing" the faculty members to "committees" or to "journals." She believes that "these types of opportunities, no matter how smart you are, you will never be able to get by yourself."

Lack of mentorship can alter a career path for some women. Zoe describes that "one of the reasons" for leaving a previous academic center was because "[the leader] who's running the department, who doesn't really care about faculty development, he cares about us making [financial gains], but not being concerned about the development of the faculty." Similarly, Yolanda steered her career focus away from research because of lack of mentorship she "ended up being frustrated and being unhappy because I was a jack of many trades and a master of none." Claire thinks that "people stay in the game if they're mentored well." Xena reports that "I think that if I had somebody pushing me along the way I probably would have gone for the promotion sooner." Audrey gives her direct boss "definitely a lot of credit for mentorship but it still was not overt and it wasn't enough of ... It was still kind of hands-off." This in turns means that she feels like she

"clawed my way to the top and I made it despite them" by "being persistent and determined and trying to figure out what I had to do to really, what positions were gonna help me." She continues to say "but I wouldn't want someone else to have to do that. I don't think it's right. It doesn't help people succeed, you know?" Without much guidance, Sarah says that "much of what I did, I fell into." Emily thinks that the combination of "lack of experience, lack of mentorship" were challenges on her career path.

Building a mentoring program is an important first step, but it's not enough. Gladys tried starting a peer-networking group in her work unit. She says that initiative "didn't work. They just didn't come." Gladys believes getting such programs to succeed can be "very hard because you have to get like-minded people." Patty also thinks that "an assigned mentor is not necessarily as helpful as someone who you feel like you can talk to, or who wants or has a real interest in you." She also raises the potential difficulty of "working with somebody and having them your mentor," for balancing honesty in confiding, with preserving the "impression" portrayed at work. Kate's program has an assigned mentorship program, but "it's not easy" to find the right fit, because she says their "personality is very important to me."

Recognizing the importance of mentorship in career development, Yolanda's advice to junior faculty is to "try and latch on to a couple of mentors, not necessarily one person because a single person can be a dangerous thing." She explains that a mentoring relationship can also be challenging to sever: "I've seen some people become successful, but it was really painful for them to try and get out from underneath their mentor's wing." Irene is "really thankful for that I have a great mentor here, [he]'s been very, very supportive." However, she thinks there is a lack of "women in leadership positions to be mentors." Likewise, Zoe urges physicians to find mentors, regardless of gender or race, "get all of the mentors that you can get because those are the people that are going to actually a) put you on these committees, and b) help you develop as a human being."

Most of the mentors that the participants described were men who supported their career paths and choices. In addition, the successful mentoring relationships described by participants had often started during their training, and continued into their faculty years. Nancy describes having "excellent mentorship" from a relationship with a mentor initiated during her fellowship training. Vera, who is struggling to find mentorship in her new leadership role, recognizes "the one exception is in my fellowship […] So I'm in contact with him and another attending from my fellowship, so sometimes I ask them things." Both Francis and Zoe independently described maintaining contact with male mentors from their respective training programs and trusting their career advice. Likewise, Sarah, Diane, Rachel, and Jane's early academic opportunities were sponsored by mentors from their respective training programs.

Sarah credits her early mentor with the direction her career took and his career advice to her to be "reaching out nationally." Beyond career help, Hannah says about her mentor that "she's taught me also just to be like a little bit tougher." Walda identifies her current boss as a mentor who believes that "I have enough value," and who had known her since she was a trainee. Olivia credits a male sponsor with directing her as a junior faculty to join a learning workshop to foster her interests in education.

Networks. Seven of the participants (26%) described the facilitating nature of networks along a career path. Jane defines networks as having "the resource of people" and believes it "is tremendous in trying to set up new leadership initiatives." She describes having participated in a "group of women" formed by some of those who attended a medical center sponsored "women's leadership workshop." The women "helped support each other," and provided a "resource of being able to bounce ideas off other people and recognize strengths of your ideas."

Having a network across the academic center also provides a broader picture for those seeking or those in leadership roles. Daisy thinks that "getting to know other faculty from around the university, it makes you think about the role of whatever you're

leading as university as a whole, as opposed to the narrow part of, I'm in this department, this medical center." Rachel expanded her ideas for her roles from meeting with "a lot of people with similar interests" and then seeking their "insights." Gladys found "some synergy" being part of a group of men and women with similar leadership positions at the medical center. Having a network means also according to Emily having "allies." She reflects that in the past, she felt "self-sufficient." She had made the "mistake of isolating herself." Her advice for those starting on their career path is to "engage more […] in your institution, outside your institution, in the leadership of your organization, […] and you do need friends, so the more you engage, the more friends you have."

Beyond the medical center, participating in an informal network of women physicians in the city, Claire is affirmed in her impressions about work and its environment. For Xena, participating in a women's only workshop nationwide meant "hearing from other peoples' experiences, hearing how women leaders got to where they are, and feeling like, 'Oh, I can do that.'" Irene notes that to build a national recognition, networking is important to achieve the required "national and international visibility" and be viewed as "a leader in the field." However, she feels she doesn't have the time for those networking opportunities, because of the clinical responsibilities. She does however contact others, and "just saying 'yes' to any opportunity." She also belongs to a "mailing group" that she describes as "wonderful." This network was established by the women in leadership of the national society of her specialty. It is "for all the women who wanted to attain leadership roles. And whenever an opportunity opened up, they would send it to us, like, there's a spot for a review, committee for this thing, anybody want it? […] something constructive to engage more women, to keep that going."

Access to leaders. Sixteen participants (59%) described the importance of having access to their leaders in advancing their careers. Not surprisingly, women in leadership positions, whether academic or hospital roles, were more likely to discuss access to leaders compared to those without leadership (64, 67 and 43%, respectively). When

asked how often she met with her leader to discuss career opportunities, Carla replied "almost never. Only when he calls me to get something out of me."

Having the ability to meet with leaders means for women the opportunity to reframe their career plans, explore new possibilities, or get the feedback they need.

Francis believes that "you have to go to the people with the power to allow you to move the needle." Xena approached her leader "I said that I have a lot of things that I feel like I could be contributing, and I see that there's this gap that's happening," setting herself on a position of leadership. Kate is deliberate about meeting with her leaders to "continuously talk to [leaders] to let them know that I'm interested and if they have any opportunity let me know." Tania similarly shares her career interests with her unit's leadership, and says she started "meeting with [the leader] and meeting with other people and announcing that I had this path that I wanted to follow."

For some participants, establishing a good working relationship with their direct leaders meant also having the support to do their job. Claire gets the support of her leader who encourages her, which she describes as "it was nice to have that senior leadership say, 'Okay, it's time to start doing it your way. I support you if there's issues.'" Audrey established her solid relationship with her direct leader by doing a task and doing it well: And she acknowledges, referring to her direct leader, "he's really the reason why I was eventually able to find my way." Ursula also describes this dynamic about her direct leader saying "he's always been very supportive of me and promoting my career, so I have to say he always said, 'You're doing well, stay on the course, don't worry.' And I would say that was probably the biggest support that I had."

Overall, being able to talk to a leader, to trust that "he keeps his word," gave Xena a sense of agency. She says "the whole process made me feel that I could control things, control my career a little bit more…" It also gave Audrey the sense of her worth and value to the program. She approached her leader, planning on leaving just a few years after being hired. Her leader was surprised and asked her "Why is this the first time

you've come to tell me that you're unhappy?" She eventually stayed on and reflects on her state of mind before that meeting that she had "never realized [her] value to them."

Olivia's advice for junior faculty is to make themselves visible, available and to deliberately meet with their leaders to discuss their interests because "all the time, you know, the chairs, they're like, 'Do you know anyone that wants to be on this committee?'" She recommends that "young faculty" should "go and tell people, don't be like me and just bump around and be fortunate that someone identifies you. Go in to [meet your leader]. 'Anything you got? Anything on the national committee?'"

Portfolio development. Twenty-two participants (81%) discussed factors related to the development of their academic portfolio, namely serving on committees and presence of leadership titles. In particular, women in positions of leadership, whether academic (93%) or hospital-based (83%), were the most likely to discuss the relevance of a portfolio on their career development, compared to 57% of those with no leadership positions.

Committees and titles. Fifteen or 56% of participants discussed the importance of committees and title on their career path. In particular, women in positions of academic leadership were more likely to discuss this concept, compared to those in hospital leadership or those without leadership (64%, 50%, and 43% respectively).

Having leadership titles is important according to Xena because "that's the gauge of academic success. It's just something that is a way of demonstrating how hard we worked, and we accomplished." Emily thinks that "you can't move to the next step unless you have leadership positions." And those positions should come with titles, because as Olivia says "sometimes having that voice comes with a title, because otherwise nobody will listen to you." Likewise, Yolanda finds that "certainly in this institution, you do need to be officially something in order for people to actually do what you say. So, having the title definitely makes a difference." Walda describes the confusion her title may have caused, and she was assumed to be the assistant *to* the director rather than the assistant

director. Of that confusion, she says “that was the first time I was like, ‘That’s horrible. I didn't like that.” However, “within like a couple of months later, my name became associate director.” Yolanda thinks that while “the title helps a lot,” one has to earn that recognition and she says “I think you have to do things before you get the title that you make people see that you have skills in your area.”

Committee work is described by some participants as a stepping stone to other and bigger opportunities. For Kate, having incremental leadership opportunities is important to build her credibility and experiences. She thinks “it’s better to go gradually” because if and when mistakes happen, “mistakes can be done by anyone, but who has gone gradually, those mistakes will be overlooked compared to the person who has suddenly made a jump and then people will start talking.” Olivia was given early on a leadership position in an area she did not enjoy. However, she found that early involvement was “a good step to get into leadership and to have a voice in leadership, but it wasn’t anything that I ever loved doing. […] It got me a seat at the table, so, that all worked out. Probably the reason that I made it so easy to step into [current position] is because I was already there.” Eva advises young faculty to “avail yourselves of the opportunities that are given to you,” even when “it wasn’t necessarily what you were passionate about but then you do a good job with that and you do get involved in those other committees and eventually the other things that you do want to do.” She also advises to remain mindful, and “if there are things that are not helping you move forward, saying ‘no’ is an important skill as well.” Audrey advocates for being “more directed” in asking for what she wanted and sharing those interests with her leaders, who appreciated her self-directed approach.

Committee work and leadership titles provided some participants with a wider reach and a better understanding of the system in which they work. Mary has found some of the committee work “fascinating” to understand how things are “run.” Jane advises that “in the beginning, you really need to say yes as much as possible, because you don’t

know what avenues it will take you down." For example, Audrey was assigned as junior faculty to what she described an administrative and pure "secretarial work." This task, however, turned out to be an opportunity because she says "I ended up having to interact with a lot of people and start to understand how" different parts of the system worked together. Walda describes her own successful experience with creating and enlarging her area of influence as "riding the wave." Olivia points that in order to have "a diverse faculty," there should be "a diverse voice at the table." This means, according to Olivia, offering leadership positions to diverse faculty, and she says "I don't think we all need to be chairs, but there needs to be more leadership positions that are available to people that aren't a chair."

However, not all committee appointments are considered as a growth opportunity by the participants. Some imply an administrative burden that detract from what they enjoy doing. Hannah describes how "when I started, I said yes to everything." However, she soon figured out that "the committees are probably not what launches your career." Those commitments were rather taking away from her available time to explore her real interests. Jane also describes being on a hospital committee and being given "a very nice title," but then realizing that "I really dreaded every month going to the meetings. Because I didn't enjoy it. And that was okay for me to give up." She disliked that committee because of the bureaucracy in the process ("it's just very disorganized" and "it's just about a lot of back and forth about policy and procedure.") and because the content was "boring too." Olivia describes a role she was assigned as a "super administrative role like super check the boxes, is the paperwork in? and again it was a role they put me in because they really wanted someone on leadership. I had no voting role. I was there to herd cats."

On the clinical track, lack of definitions may mean less accountability and more flexibility. Tania describes taking a new role without having defined expectations: "it wasn't really outlined what was expected. The role and utility of it, I felt like almost

anything I did was something more than was being done before, but I didn't feel like it was really defined what needed to be done." She didn't mind this flexibility because it meant that "it didn't feel like an overwhelming burden of work." Rachel had a similar experience. Rachel was promoted to another leadership role, replacing her leader who used to hold the title, and "it was unclear to him what the role was supposed to mean. So I'm still learning…"

Leading without a title. Seven of the participants (26%), most of whom were women in positions of academic leadership, described having roles of leadership without the associated titles. When asked whether she held any leadership roles, Zoe replied "at first I was going to say no and then it suddenly started occurring to me, I have all these leadership roles I hadn't thought of."

Some of the participants described taking leadership responsibilities during periods of transitions in their units, without the title or the formal recognition from the leaders. Emily describes doing the work as a training program director and a unit leader, without a formal title. Gladys likewise "had been de facto running a lot of [the work unit] anyway because the previous [unit leader] was not as interested in operations or management." Zoe describes how during a time of change in her previous workplace, she "had hung in there, and actually kept the [work unit] together […] I was the person doing all the work holding that all together." Although she "didn't actually ask, I just assumed" that she would be later given the leadership title.

Audrey describes her role as "I'm really probably the second person in command in terms of running the whole clinical operations of our [work unit] right under my [direct leader] in terms of making decisions about where people are going, where the money's going, scheduling. All of that stuff." She does not however "have a defined title" for her role. Walda has a pragmatic outlook on the difference between roles and titles: "There's a sense of what responsibilities might fall on your shoulder, whether or not you have a title, how much you influence everybody around you. I think my evolution to a leader and who

I am, what I do, I think expands more than what my title says." She enjoys the ability to manage without being on center stage. She says "I called myself the stage manager. I was the one who stayed back. I was making sure everything ran well."

When the title came to the participant much later, after years of unrecognized leadership, it wasn't as valued. Sarah describes a title she had recently received as "most humorous. Obviously, it's not that meaningful. It's not important to me." She "was already the de facto head of [work unit] anyway. Everybody recognized me for that. Just putting a title on it, it was a completely new title. It's not like somebody else had the title, and then I inherited it." In addition, "It didn't come with any extra money or perks or anything like that."

Token appointment. Eight participants (30%), the majority of whom have academic leadership positions, described situations when titles and appointments were made without a backing substance to them. Olivia describes joining the study center soon after finishing training, and being thrust into a position of leadership that didn't fit, limiting her effectiveness.

Lack of definitions of positions meant occasionally a perceived lack of legitimacy. A former mentor and leader gave Rachel a title that she is reluctant to use: "it's not in my email signature." She says "his theory is if you give people a title then they'll start […] will start acting the responsibility that goes with the title." Carla questions why she and a colleague were offered to join a committee at the center: "I'm guessing, this is a total assumption on my part, maybe they wanted us because we are not old white guys." Diane says "I see women leaders that I…I feel maybe were put in that position because they were a woman, or they were given favor over men." Mary observes that one woman in leadership "has even worked harder and had the credentials to have a higher title than that. It's almost like they gave her a courtesy title." Xena notes that "it's one thing to have a title and more responsibilities, but there has to be something to back that up."

Promotions. Thirteen participants (48%) discuss the process and outcomes of promotions within the study center. In addition, 57% of those with academic leadership, and 57% of those without leadership discussed the topic.

Promotions may be seen by some as a measure of success in academic medicine. Defining the process and the criteria for promotions can be a challenge for both men and women. Audrey advises junior faculty in her area of work to be proactive in their pursuit of promotions, and it's "not even just women, younger junior guys ask me too about promotion." Walda describes preparing her portfolio for promotions and realizing that "there were holes" in her CV that she wasn't aware of, until she took "an inventory of what's valuable to me, what's valuable to [university]."

Carla wonders about the relevance of the whole promotions process, and how it works. About getting promoting, she says "I think it's a matter of number of years, based on what I can tell, but I don't really know. Nobody's really told me what that entails." Audrey observes that "the awkward thing is there's people older than me who are still assistant who don't have as much on their CV and they haven't ... I don't think they've even talked to [work unit leader] about it." Francis describes what she perceives as challenges for promotion from assistant to associate professor and says "I feel like becoming professor is even more of a unicorn."

Promotions had been traditionally defined with criteria favoring those who are on a research track, with a perceived higher value attributed to the tenure track. Daisy describes the challenges of getting promoted on a tenure track in academic medicine, which requires research productivity and extramural funding. She wonders why should a researcher on the tenure track "earn more value than someone who's an amazing clinician. But there's no tenure for that." Sarah also notes that "there was zero guidance for those of us who were not on the tenure track." According to Irene, "the only way to achieve career success" for a physician on the tenure track is "in academic medicine" and "success is measured, unfortunately, in a very binary way, in just achievements or being

recipients of large grants and very powerful papers." Claire hesitates before sharing what she was told as she joined that "what I was told was a lot of the departments that make a lot of money, there's some hesitancy to put [the faculty] on the tenure track" because of the financial implications for the individual, their department and the university.

Since then, promotion tracks have expanded to acknowledge the contributions of physicians on the clinical and educational tracks. For example, Olivia notes that with that the addition of "a new arm" for promotion along the education path, "there's no question that education now has way more respect than it did 15 years ago. I mean, now it is real."

However, the presence of the promotion tracks doesn't guarantee promotion. Audrey is trying to explore her own path toward promotion because the criteria for promotions on her track are not as well defined, and in her work unit "they've actually not yet put anybody through" for promotion on either of the two non-research tracks: clinical or educational. This means there is no guidance from her leadership on timeline for promotion, or on the required criteria. Kate likewise relates her experience exploring promotion with her leaders. When she approached her leaders for guidance on building her academic portfolio toward promotion, she reports "they said it's too early; I said no, it's not too early. I have to make a way to get there." Sarah believes there is a misconception about the promotion process and "that's something I think that a lot of people don't understand. It's the school that gives promotions, so it's not your hospital committees and all that." Moreover, she says "not only that it's from the school, but you need to be nationally recognized. You can't just be in your own little place."

Even if the promotion process is well defined online and on paper, leaders in charge of approving the promotion packages may not all agree on the merits of the application. Olivia described applying for promotion but "the department kicked it back," requesting additional letters of support, because "it's a new promotion system," and "because they wanna make sure it passes." She pushed back, pointing out that what she was "being asked to do," was "completely different than anyone else is being asked to

do." She did eventually get promoted. However, this has tainted her experience and despite encouragements, she refuses "to go through it again." Walda was told that "yes, […] you meet the criteria but we like to bet 1,000 so we wanna make sure that you're at that, and then some, so that there's absolutely no doubt from when you're put up for promotion that you're gonna get it."

Similarly, Francis shares her perception about the unclarity of the promotion process and that "it's not transparent and not fair." Irene likewise observes that "there are some female attendings who've been assistant professor for 10-15 years. So why do some people get promoted and some don't? It's not very clear to us." Reflecting on her experience, Beatrix says "people should be able to have applied for positions and be reviewed by a fair system. Hands down I would have had no problem."

Academic requirements for promotions may be straining for some positions. Walda reflects that she had been satisfied with her career choices and leadership opportunities, until she started "preparing my CV and all that stuff for promotion, I realized, 'Hey, I guess I need to do that stuff because that's the currency for promotion.'" However, the external definition of what success should look like in academic medicine was at odds with her choices. Walda says about her career path "I think it's a great tremendous growth path, and I've learned so much, and I'm completely fulfilled until I had someone else's arbitrary definition of what is success and what is promotion." Mary describes the process of promotion as "climbing up in academics," and talks about the need for "writing" because in her opinion "there's some sort of something to fill your CV required." In addition, the incentives for promotions in academic medicine are not compelling, according to Sarah. She says that few people "strive for" promotions in the medical center, because the financial incentives are absent, compared to other schools in the university.

Transparency. Transparency was described as a challenge to advancement and to satisfaction by nine participants (33%). Women who were not in positions of leadership

were more likely to discuss the perceived lack of transparency. Transparency or lack thereof was invoked in discussing: processes of promotion, compensation, and resource allocation.

Olivia notes that part of the reason she wanted to have a position of leadership was "because I do like to know why things are happening." She also thinks that lack of transparency is leading to lack of satisfaction: "I think when I look at lot of the dissatisfaction that happens in our department, it's that sometimes people don't understand why the decisions were made."

Lack of transparency is perceived as wide-spread in academic medicine. Irene points out that when it comes to compensation packages, for example, "no one will ever know unless there's transparency in the institution, which I don't think any institution unfortunately is really transparent… unless it's like a state school where their salaries are all public." Audrey thinks that "it's so not transparent that even when they're doing something nice for you, you don't even realize it." She describes how she found out she had received a bonus not from direct communication from her leader, but by noting that her "bank account had increased in size."

Irene wonders when "talking about resources," how the decisions are made for "which doctor gets a nurse practitioner or physician's assistant or a secretary? Like, why do some guys have like two [physician assistants] following them?" Mary likewise notes that when it comes to finances, "nothing's transparent."

Carla mentions that there are anticipated changes in the structure and the business model in her work unit, in the next few years, however, she says "we just don't know what they're going to be and how that factors into each of" the team members practice. The members of her work unit are not included in those negotiations, which only involve the leader: "they'll strike a deal and it'll trickle down and then we'll all figure out where we fall." Beatrix notes that "I think we need more transparency to get to equity." Mary wishes there was more transparency of information, because it "inhibits my ability to put

things together and ask for a raise." She sounds, however, wary of measures that were discussed to promote transparency such as "they've talked about starting a tally on clinical time and giving units to time." She seems to assume that if objective measures were to be deliberately applied to the clinical work, then it will be done at the expense of schedule flexibility: "my fear is that, when it becomes looked at and transparent everywhere, in this weird effort to be fair, that you're going to lose flexibility."

Situational Factors

Factors influencing the participants' situations play a role in defining how they perceive, approach and establish a balance between their work and life commitments. Twenty-six participants (96%) described elements of their home life situation and their effect on their career paths. The summary of the findings is presented in table 7 and Appendix J.

Audrey shares that both work and life demands are challenging. She describes as her "biggest" challenge the need to "balance between my husband's career, my career, and the kids." Work-life balance is often discussed in terms of time allotment. Yolanda however, seemed to offer a different interpretation that includes balancing identities: "how do you be an interesting, good person, parent, friend, as well as being a good academic physician. How do you put time and effort into each of those things?"

In the work-life balance, work elements are defined and identifiable. Factors that affect the life aspect include: dependent care, the role of partners, personal wellness, and relevance of geographic location. Work-life balance was described by Patty as a juggling act: "You can only have so many balls up in the air." She also recognizes that is a skill that can be developed, and "when you're an expert you can juggle more."

Table 7. Summary of Finding #2 – Situational Factors

Situational Factors	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Dependent care	**25 (93%)**	**13 (93%)**	**6 (100%)**	**6 (86%)**
Physical and time demands	18 (67%)	7 (50%)	6 (100%)	5 (71%)
Emotional demands	19 (70%)	11 (79%)	3 (50%)	5 (71%)
Apprehension	4 (15%)	2 (14%)	1 (17%)	1 (14%)
Guilt	9 (33%)	7 (50%)	-	2 (29%)
Acceptance	9 (33%)	5 (36%)	2 (33%)	2 (29%)
Gender differences	9 (33%)	6 (43%)	1 (17%)	2 (29%)
Partners	**21 (78%)**	**11 (79%)**	**4 (67%)**	**6 (86%)**
Partners and career paths	13 (48%)	9 (64%)	2 (33%)	2 (29%)
Partners and home life	13 (48%)	7 (50%)	3 (50%)	3 (43%)
Partners as challenges	5 (19%)	3 (21%)	-	2 (29%)
Geographic factors	**9 (33%)**	**4 (29%)**	**2 (33%)**	**2 (29%)**
Anchor	6 (22%)	2 (14%)	2 (33%)	1 (14%)
Mobility	3 (11%)	2 (14%)	-	1 (14%)

Dependent care. Twenty-five participants, or 93%, discussed factors related to dependent care. Mary describes the rhythm of her days as a physician and a mother as follows:

> I drove home at probably 6:30, still light, so many people were like, out walking around. Like there was people going to dinner, […] people like walking to dinner. People were going for runs, and literally last night I was like, wow, I haven't done that, like eat a dinner out, a run out, just anything at that time. Like 6:30 to 7 is get the nanny home, get the kids to wind down. 7:30 to 8:30 is get them to bed. By 8:30 to 9, I'm going to sleep myself, and then I'm up at 4 with [her dependent], and then it starts all over again.

Dependent care is discussed in the following section in terms of demands, of emotional response to those demands, and of gender differences.

Physical and time demands. Eighteen participants (67%) described the physical and time demands of dependent care. Rachel, who does not have children, believes that

having dependent care would be akin to having "a whole other job when I got home." Kate describes her involvement at work and at home: "I have so many things going on [at work], and my [dependents] they go to school, their education, their babysitter, their classes. You won't believe how much I am juggling with, so I have to be efficient. If I am not efficient then I will be lost." Xena self-describes herself as "tiger mom," while Patty wants to find a "balance" between "her involvement and their sense of responsibility." She thinks it's important because "you don't want to take over your kids' lives either, and then they'll be helpless souls stuck with you forever." Mary says, that although her "husband helps a little bit," and the "nanny is amazing," "it's all on me at home in the evenings, pretty much all on me." In addition, elderly parent support can be, as Irene describes it, "a big issue" that may affect women. She thinks that "stereotypically women are closer to the family than men. If you're a provider and caregiver for elderly as well as a younger generation that ends up being difficult."

For some participants, having dependent care affects how women engage at work. Mary noticed that "it wasn't until I had kids, and then it got harder to keep up at work. Physically, emotionally, advancement wise, something changed a little bit." This also influences how she approaches work and assignments. She describes herself and other physicians who are mothers as follows:

> We run a little bit more exhausted sometimes, or a little bit tired, and we get a little bit more tipped at work when we're super busy and don't have time to sit down, because we have a whole day in the morning, like, getting the kids ready, set. And then we have a whole day looking at us at night: dinner, kids, bath, and I feel like no downtime at work […]. We just don't have downtime in the day.

Mary reflects on taking on more leadership in the future, but recognizes that currently her family is her priority: "I would love to be involved in more leadership positions as I get older and do this more, but I don't want to give up time, like those guys are the most important things to me: my family." Jane likewise recognizes that the change in her "personal situation" has made her more tentative about the next stages of

her career. After returning from maternity leave, she wants to "give [herself] a little time to adjust to being back at work, to still have time and energy for [her] kids at home." Daisy reflects on taking additional leadership roles. She admits being "reluctant to figure out" the next steps and their timing, because she believes "there will be an impact on my family and my kids or I assume there will be." Yolanda feels "ultimately happy with" her choices, of "spending a little less time at work and more time with family" compared to the "guy [who] is spending more time at work and getting promoted." She describes the resulting closeness to her family as "really rewarding."

In order to be able to juggle those demands successfully, Kate credits her time management skills ("time allocation is very important […] I do not rest even a single minute"), multitasking abilities ("When I am preparing dinner at home I am helping my [dependent] with [their] homework also"), and including her children in the organization ("it's not easy task, but they are getting there too.") Similarly, Emily advises women to delegate and she says "anything that's a quarter of your hourly rate, you hire somebody to do." Describing her family arrangements, she describes the non-essential home keeping tasks as "noise." For example, she says "I don't like cooking, and it's a lot of work, and I'd rather spend it with the family. Maybe that's why I have time, because I allocate my time more towards true family and true work and the noise in between is less."

Participants describe dependent care arrangements that often involve paid care givers. Audrey describes her nanny as "part of our family." Diane describes a trainee called back to work, and bringing their "2-year old" with them "because the baby sitter has gone home." Diane goes on to say "you figure it out. […] But you need the help." For Patty, she describes her dependent-care arrangements as follows: "We have a village. We have a full-time nanny and then other babysitters that help in the morning and the afternoon, and then we have very involved grandparents as well."

But having paid child care doesn't come without additional work. Patty feels that she has to manage the child care "so even if you're not doing it, you also then have to

manage it. That is a level of stress, because then I actually do feel like a manager sometimes, and I don't feel like I'm a good manager." Moreover, Jane comments that while "childcare is hugely important," she wants "to be around for my kids to some degree. Yeah, I could have a nanny from early in the morning to late at night, and then I don't have to be home. But that doesn't feel right to me."

Patty thinks her dependents are "really proud" of their working mother. She recognizes it is "tough when I leave. It's tough." Her approach is to relay to them that her work is "impactful" and she says:

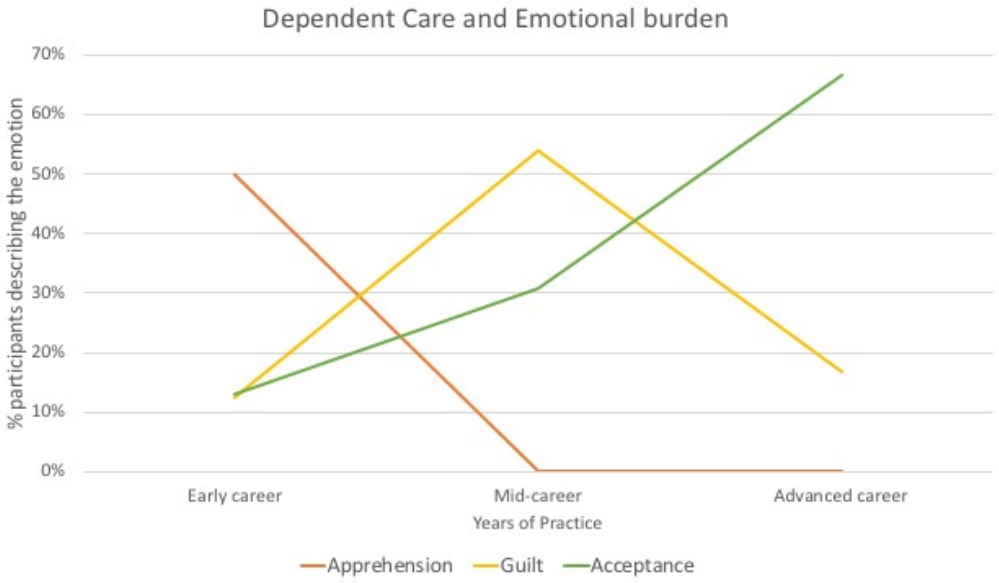
> When I tell them why I'm leaving, and […] I really do explain to them what I do at work, because I think it's a lot easier for them to know I'm leaving because […] there's somebody [who's sick] who needs something. They're very interested and want to hear about my day and what I do.

Daisy recalls how she would justify to her kids her time away at work or traveling for conferences: "I used to always say: 'I don't wanna go but I have to go.' Then I realized, 'no I actually sometimes really wanna go too.' Like I'd wanna be home but I also wanna go because that's part of my job and interesting and part of what I do." Gladys thinks that overall, the work schedule should be flexible to allow those personal considerations. She suggests that "if people want to work part time, they should be allowed to. Because there are times when you want to step away, times when you want to become more involved."

Emotional burden. Nineteen participants (70%) described the emotional burden of dependent care in three ways: apprehension, guilt, and acceptance. Participants with or without leadership were equally likely to describe those emotional factors. However, depending on the stage of their careers, they were more likely to describe different feelings. When early career women described the emotional burden of dependent care, 66% discussed "apprehension" of its effect on their careers, while 17% mentioned feelings of "guilt," and 17% discussed feelings of "acceptance." Conversely, women in mid-career were more likely to discuss "guilt" than "acceptance" (64% vs 36%). Finally,

women in advanced career stages were more likely to discuss “acceptance” than “guilt” (80% vs 20%). The results are illustrated in Figure 2.

Figure 2. Emotional Burden of Dependent-Care on Women Faculty Based on Their Years in Practice



Apprehension. Participants without current dependent care shared comments that reflect an apprehension of how dependent care could affect their career. Rachel describes having a “very happy married life, but I don’t have kids” and doesn’t think she could maintain her level of involvement if her situation changed “if I wanted them I think that would be a huge challenge for me. […] I definitely couldn’t do all the things that I do if I had that responsibility on top of it.” Zoe had “a little bit more freedom” to move to her current position because her dependent “left for college this year.” Vera says “I don’t know how people [with kids] do it.”

Guilt. Xena shares “that actually is the most amount of stress that I have is wanting my mom to be happy, and my kids happy.” When asked how her kids view her work, Kate says “Oh they complain about it especially my younger [dependent who] makes me feel guilty, ‘Oh mommy I missed you so much, you were not there. I was sick,

you were not there. I was hungry you were not there.'" Francis reports that because of her work and career demands, "in the fall I was able to go to no school events. Not one. That to me is not sustainable." She thinks that her dependents are young enough that they "need me now in a way that I am not there for them. And I don't get a second opportunity." The conclusion in her opinion to reach this balance is that right now, "I have to work less. I have to." However, she doesn't dismiss future pursuit of leadership positions. She explains that while time with children can't be replaced, opportunities for leadership may again become available when the kids are older: "I mean that maybe that's why I'm not as career focused because I recognize that I don't get a second chance at this time. Whereas, potentially, you know, sort of good leaders can be raised at any point once my kids are in high school." Audrey describes feeling "racked with guilt" for not actively organizing "playdates" for her youngest child, even though she is adjusted or as Audrey describes it "very well socialized." Jane says that, although having an independent career is important to her, that "never being home when my kids come home from school doesn't feel right to me." Daisy feels that at this stage her children still need her, and she says "I don't wanna take the time away from them and I struggle with that." She turned out a speaking engagement at an international conference to go to her dependent's school interviews and she says "I kinda joke that it looks really bad if the mom's not there. You look like a horrible, dysfunctional family when you show up and they're like, 'where's your mom?'" Hannah also feels that she would like to be more involved in the day to day, and she says "I'm struggling because the things that I want for my home are not getting done." She also says she "regrets now that I don't have the time or the patience" to emulate her childhood and her time with her own mother: "we were always playing games, we were always like inventing things. She's super like handy and crafty."

Acceptance. Gladys recalls feeling "guilty all the time. I felt like I didn't spend enough time with the kids, that there were things that I wanted to do with them."

However, her advice to younger faculty is to "know that everybody feels guilty" and shouldn't "be guilty" because the "kids probably do better on many levels […] if they go to daycare […] because they socialize and learn a lot." Likewise, "having a baby sitter" to care for the kids means "that's another person who loves them." Gladys also reminds younger women that "the fact that your husband is doing fifty percent of the child care, there's nothing wrong with that. That's supposed to be the way it is." Thinking back about her family, she concludes that "everybody survived." Xena recognizes that sometimes, because of her work commitments, her "family life gives." In return, she deliberately chooses that "when I'm home, I try to be really home." Audrey similarly has decided to "keep work more in check" and that "I would like to spend more time with my kids, and when I'm with them I want to be present with them." She describes measures she took to disconnect from work and emails by putting her phone away when at home. She reflects that although it feels like "work never ends," "there's nothing that is so urgent that can't be taken care of in two and a half hours."

Eva sums it up as follows:

> I think […] whether you're male or female, you're always going to be imbalanced. In one regard or another. Not everything is going to be perfect, just going to be perfectly balanced. And I think that's important to keep in mind and recognize that you're not going to be the perfect [physician], or the perfect wife, or mother, or things like that, and be able to be ok with some imperfection.

Patty's words echo Eva's conclusion. She believes that although she "strives to make it better, […] I don't think you can do everything perfectly, or to your level of perfection." She declares that "I'm kind of okay with the level of imperfection in every aspect of my life." Daisy is confident in the quality of her parenting and she believes that "a better mother is a working mother."

Gender differences. Nine participants (33%) described perceived gender differences in dependent care provisions. Xena observes that among her colleagues, men also "have family things, and young kids, and other things that are taking their attention

that we all have, but we hear about it from the women more than the men." Diane believes that work-life balance issues affect everyone regardless of gender. Mary has a different opinion, and she remarks that "I don't know anyone in my department where the majority of the dependent care falls on them over their partner. I'm only aware of the moms that have the majority of the dependent care." She explains those gender differences further that "in every relationship, someone is the primary caretaker, and whether it's talked about or not, you [as woman] just step into that role." Yolanda recalls feeling "sort of horrified" when her colleague "was spending an afternoon playing golf […] instead of being with [his] kids." She says "for me, it was either work or kids early on, and I think that sometimes men didn't have that hold that was quite as strong." Francis also thinks that men may be better at separating work and family: "men compartmentalize it so much better than women do." She feels women likely choose to be more involved. Some of that seems to be driven by normalized gender behaviors and expectations, and she shares "I do this to myself and I compare myself to stay-at-home moms. Although nobody else makes comparisons, only me." When school events come up, Mary is more likely to "go alone," while her husband has often missed them because "his work stuff will usually come first or not be canceled for a child event. Whereas, I'm much more likely to rearrange my whole schedule or cancel for a child care event or a school event." She acknowledges that "part of it's because I feel it's my cultural or mom obligation." Hannah reports that "when my husband comes home, he goes upstairs. […] He's not dying to have more time with them […] he's happy to let other people do it, and I don't feel that way." Audrey describes feeling guilty for missing school events for her children while those "feelings of guilt are not something my husband has in any way, shape or form and I am always ... If I miss something at the school or I can't go I just feel so bad."

Jane also remarks that, while there are men who choose to stay at home, "it's just much more socially acceptable for women to scale back then for men to scale back."

Irene also thinks that women are "more prone to say, if our family comes into trouble, we're the first ones to give up."

Olivia believes that women will be the primary caretakers of their dependent more often than men, and that they shouldn't be made to feel guilty about those commitments:

> I don't believe women can have it all. I don't think anyone can have it all, but they shouldn't be made to feel guilty. No matter what I believe, 99% of the time, they're gonna be more of the caregivers than the man is. It's just the way it is. They shouldn't feel badly about that. They actually should be really proud of it.

Partnerships and social/family networks. The influence of partners was discussed in relation to career paths, and to home life. Women with partners overall described them as supportive of their careers and their choices. Their support often manifests directly in their advising and supportive role.

Partners and career paths. Thirteen participants (48%) describe the support of their partners as they decided on the next steps in their career. In particular, women in academic leadership positions were more likely to describe the supportive and facilitating role of their partners. 64% of those in academic positions discussed the supportive roles of their partners, compared to 33% of those in hospital leadership and 29% of those without leadership roles.

Partners in non-medical professions were as likely as those in medical professions to be supportive of the participants' careers. Examples of these include support for increasing work responsibility for Tania, of relocation for Eva and Zoe, of career decisions for Sarah and Daisy. Eva's husband encouraged her to explore a leadership opportunity, even though it entailed geographic relocation. Similarly, Zoe's husband supported her to accept a position that they both saw as a "good job opportunity," even though it meant living in different cities. He reassured her "we'll make it work." Walda describes her husband as being "a great champion of what I'm capable of doing." She also says he is understanding of "the importance of career path and growth and

responsibility" and he is "very supportive of [her] taking the next step." She thinks that's important because she anticipates that, as she takes on more responsibilities, "he's the one who would end up having to shoulder more" at home. Xena finds her husband "really, really helpful" in discussing her career decisions.

Most of the participants with partners described them to be accommodating of the unpredictable work demands and schedules. Eva describes her husband as "totally understanding" of the long hours, and when her work prevents her from upholding their social or weekend plans. Daisy and Sarah both describe traveling along with their children and husbands to attend their respective specialties' national meetings. Daisy describes her husband as the "ideal partner."

Partners and home life. Thirteen participants (48%) discussed the help from their partners in managing their home situation. However, the exact contribution of partners to the care of dependents and to the household varies. Diane says "my husband has been very active and involved with my kids. Whenever there's a school thing he's on that." In her opinion, the relationship "has to be a partnership." That's what Daisy describes in her home life arrangement: "my husband […] is incredibly supportive, and wants me to succeed, is super hands on with the kids. […] We divide things pretty evenly." Zoe says she "still runs the household." Xena describes that "my husband is great as long as you tell him what to do. He'll take them to doctors' appointments as long as I've done the scheduling." The profession of Kate's husband entails early morning and late evenings, leaving her to "take care of [her dependents]." Mary describes her situation as follows: "if I'm home and he's home and the kids are home, if they need anything it's mom. If anything has to be picked up off the floor, it's mom. And he's usually contributing to the mess a little bit, but that's just how it is." Audrey notes that although she and her husband "have a very shared way of handling the family but nevertheless, a lot of that, the real nitty gritty of taking care of the kids […], it really fell to me. So that's a big distraction." In addition, Audrey notes "I don't think he has a good concept of all those other little

things that have to happen," like signing up for classes, camps, making doctors' appointments, or "when the season changes I'm thinking to myself, 'do they have shorts?' […] That just doesn't cross his mind." Daisy thinks there might be truth to the "gender stereotypes" and that "we are just wired differently." She describes the "constant running in your head of lists," which requires a lot of "mental energy" and that "my head is never turned off and I don't know, maybe it's just me or it's women."

Partners as challenges. Five women described partners that demonstrated behaviors perceived as a challenge. Three participants described uneven help in the home situation, and two participants described partners who are not in support of more work involvement. Both of those participants are not considering positions of leadership. Hannah shares that her "husband doesn't understand why we [physicians] put these restrictions on ourselves and like 'why can't you leave if there's nothing going on?' or 'why can't you just say no, I'm not working an extra weekend?'" Similarly, Francis thinks that her husband "would not be in support of me having some career change, or career alteration that required more of me."

Geographic mobility or anchoring. Geographic factors were discussed by nine participants (33%). Most of those who discussed those factors felt anchored in their current location. Yolanda decided against moving to another position in another city because "the kids were in school, so at various times when I thought about going back, I was reluctant to uproot them." Daisy is reluctant to think about "uprooting her family" and going somewhere else, because "our parents live here" and she wants to keep the social and school connections of her children. Earlier in her career, Gladys felt anchored to the city because of a combination of her kids' schooling and her parents' proximity. Now, later in her career, she says that both she and her husband "sort of made very nice, comfortable niches for ourselves." Francis similarly describes not being "ready to leave." She says that she would need a "a really good reason" to leave because their "social support network is so deep and broad."

Eva moved across states for the "opportunity to move up the leadership role." Claire acknowledges that "a lot of people in academic [medical specialty] do change jobs because […] they'll get up the ladder faster if they do it that way." However, she favors "stability," accepting a "lower slope" of her career path. She says "I do think my number one is stability. I like having a home, and I like knowing people around me, and I don't like shifting jobs." Mary says she would have "no objections to moving" if a career opportunity "were to open up" for her husband.

Motivational Factors

Participants described the motivational factors that facilitate and hinder their career paths. Those were grouped in four major categories: desires and interests in leadership, negotiation skills, self-efficacy toward leadership, and gender stereotypes on a career path. The details are presented in table 8 and Appendix K.

Table 8. Summary of Finding #2 – Motivational Factors

Motivational Factors	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Desires and Interests	**27 (100%)**	**14 (100%)**	**6 (100%)**	**7 (100%)**
Active seeking/have sought	17 (63%)	11 (79%)	3 (50%)	3 (43%)
Contentment	13 (48%)	7 (50%)	5 (83%)	1 (14%)
Lack of interest	17 (63%)	10 (71%)	17 (1%)	6 (86%)
Negotiations	**19 (70%)**	**11 (79%)**	**4 (67%)**	**4 (57%)**
Facilitator	10 (37%)	8 (57%)	-	2 (29%)
Challenge	17 (63%)	10 (71%)	4 (67%)	3 (43%)
Self-efficacy	**24 (89%)**	**14 (100%)**	**6 (100%)**	**4 (57%)**
Facilitator	21 (78%)	12 (86%)	6 (100%)	3 (43%)
Challenge	8 (30%)	7 (50%)	-	1 (14%)
Gender Stereotypes	**10 (37%)**	**7 (50%)**	**2 (33%)**	**1 (14%)**

Desires and interests. In general, women who are in leadership and those are interested in leadership describe having a clear idea of what they want, and are proactive about pursuing those interests. Hannah says "everything that I am involved with has been things that I have […] gone to find." Desires and interests in leadership are described along three categories: actively seeking/have sought leadership, content in current positions, not interested in any or in additional leadership. The categories are described with significant overlap as the interviews assessed interests in leadership spanning the career paths, past, present and future.

Active seeking of leadership. Seventeen participants (63%) describe actively seeking or having sought positions of leadership, which may or may not have been successful in getting them to leadership. Women in academic leadership were noticeably more likely to be seeking or to have sought positions of leadership (79%), compared to 50% of those in hospital leadership, and 43% of those without leadership positions.

The drive behind seeking positions of leadership was not described in terms of power, or recognition or titles. Instead, it was described along the need to make a difference or finding an enjoyable challenge.

Getting into leadership for Eva was not about positions or titles, but rather the natural progression of her involvement. She says "you see something that you don't like or isn't working well and you put together a route to fix it and then all of a sudden you are the leader." This involvement is also the result of values that drive their behaviors. Gladys says that as a "daughter of immigrants" who was always told by her parents "you've got to make things better for everybody else around you, and if things are bad […], you have to be involved and you can't just sit back." Walda got into her leadership role because of a similar outlook of taking the initiative and succeeding in fixing what wasn't working. She recalls "I took it on myself to say, 'All right. Let me be the person to work out the kinks, figure this out for you guys. Trust me. This is what we're gonna need to do.'" Nancy believes "you don't need a title" to be able to engage in the work she

likes. Walda likewise thinks that "we are our worst enemies," when we try to define leadership in narrow terms of titles rather than influence. Aside from having a title, she says "there's a lot of other ways to influence." Sarah and Tania mention their ability and the need to "speak up," when the need arises. Sarah says "it may work. It may not, but you have to try."

For others, positions of leadership are gratifying in themselves. Kate describes attaining positions of leadership as "very gratifying and satisfying." She wonders "what's the point if I'm staying in academics if I don't take my career further?" Claire finds the academic environment to be "very intellectually stimulating." However, she acknowledges that the decision to stay in that environment depends on a combination of situational factors and on the presence of what she describes as an "innate desire." Audrey on the other hand, describes herself as "always having this problem of liking too many things." This attitude prevented her "early on" in her career from finding a focus, and instead she was "just doing what everyone told me and I just was going along." Olivia retraces the history of her current leadership position to the fortuitous insight of a leader. She was unhappy in her position, struggling to find enjoyment at work, and thinking of leaving work and medicine. She recalls approaching her leader who said "we should think of a way to keep you." He went on to create a position for her that proved to be the right career move for her. Jane likes novelty, believes change is interesting and says "I've personally always thrived on having something new." She enjoys the challenges of new experiences, as long as she's "not so challenged that I'm going to fall flat on my face." Daisy describes this outlook as her "type A personality. It's like you always gotta do more, get the next thing."

Contentment in current status. Thirteen participants (44%) are content in their current situation, with regards to leadership roles and responsibilities. Those were most likely to have current positions of leadership, whether academic or hospital.

For several participants, the lack of active pursuit of additional leadership positions comes from a contentment in their current positions. Diane says that her "heart [is not] set on anything," but that instead, she "kind of putters along," doing her "own projects" and "what interests" her. In her opinion, to get to leadership, "you have to want to do it," because otherwise "you lose." Yolanda describes herself as "content" with the roles she currently has, saying "I feel like I make a difference in these roles and I don't need something more." Walda describes a similar outlook, saying "I don't have FOMO (the fear of missing out)" on new opportunities or positions. She says she's aiming for "that balance," and has realized that she "can be happy and feel accomplished and not necessarily be the leader of something." Patty thinks there is a time to "draw the line" on aspirations and wanting to "continue to go up." Using an elevator metaphor, she feels that "this is [her] floor" and accepts this stage as that's "where we're kind of good." Olivia enjoys her current leadership position, and is not seeking further advancement or promotions, saying "I'm where I want to be."

Interests in leadership and career advancements are not described by the participants as binary, as all or none. Rather, they are described as a balanced outlook on how much to keep and how much to let go. Olivia has enjoyed her positions for the opportunities of voicing her opinion, of having an influence on the process. She wants "to be involved with the discussion," however, she says she has "no desire to ever be a chairman of [a] department […] I've no desire to go beyond what I am now in terms of leadership. I just […] wanna be in the room where it's happening, when it's happening." She also says that pursuing further promotions won't add anything to her career, and that it is "not gonna make me happier. It's not worth to me an iota of my time to chase it. […] It doesn't matter to me." Similarly, Rachel describes not being interested in "taking in on more responsibility," but is instead trying "to figure out how to hone in on the things that I care about and delegate the other stuff to other people." Jane also feels she has "too many balls in the air." Accordingly, she is not seeking "senior strategic positions,"

because she says she doesn't "want to commit to something that I'm not able to dedicate appropriate time and resources to." However, she also says she cannot "really imagine for myself scaling back to not having a leadership role." Gladys, having served in leadership positions for several years, says she doesn't "have as much energy left" in her to seek future positions. Although she is not thinking about retirement, she sometimes thinks "oh, wouldn't it be nice to sort of step back."

Lack of interest. Seventeen participants (63%) explicitly described a lack of interest in academic leadership roles. Beatrix believes that "a lot of people don't want to lead. It's okay."

There are other various deterrents for seeking advanced positions in academic medicine. Those challenges are: the personality of the participant, the path to leadership, the position of leadership, and the implications on participants' life.

Beatrix points out that when it comes to personality traits "you can't change who you are." Claire describes herself saying "I'm not a terribly competitive person […]. I just get to the point that I'm happy, and I'm fine coasting," without "necessarily [needing] to be the one who's in charge of it all." However, despite growing up "shy," and "not confident," she acknowledges being driven by challenge. Audrey likewise envisages herself one day as the leader of her work unit, however she enjoys her relation with her direct leader and she says "it's not like I'm gunning to take his job, you know?" Daisy describes that part of her personality is "to have a connection" with the people she's leading. In some situations, this connection comes with a price of the inability to effectively manage relations when in a position of leadership. Hannah describes herself as "too sensitive," and that she would question herself, and her responses. She says "I'll linger over a text message for days of how like am I gonna make up for this. And what did I do wrong." Ursula feels that a leadership position requires "a stronger personality than I currently have to handle those sorts of conflicts and whatnot." Vera also says she is "a very tentative leader. I don't think I'm very aggressive about leading." This might be

one of the reasons why she feels "much more comfortable doing stuff over email than in person." Audrey describes the conflict management aspect of leadership as the "most difficult thing" in her position. She says "I'm pretty friendly with most people but sometimes you sort of have to tell somebody something they don't want to hear."

Conversely, having a strong personality has not served Beatrix as well. She says she was often labeled as "difficult person," for refusing to "play the game." In her opinion, this is not being "difficult," but rather that she "didn't tolerate behavior and attitudes that I thought were inappropriate in a strong way." Her success however is partly because of persistence, or how she refers to it, being "stubborn." Sarah, reflecting back on her early career path, admits that she was "arrogant in thinking I knew better, I knew what I should do." This attitude may have prevented her from seeking advice and help from others in order to succeed.

Some participants are not interested in engaging in the academic requirements of scholarship. Eva states that she is interested in leadership with a clinical focus. However, she is not seeking academic forms of leadership such as chair or dean. She thinks that those academic positions are "for people who are very oriented for research and education as their primary focus." Francis likewise claims to have "no interest, just zero" in career advancement and promotion on the academic track. Referring to colleagues who "have made tenure," she exclaims: "I don't want that life! The sacrifices it took them to get there. I don't see the benefit." She does remain engaged in the activities of academic pursuit such as dissemination of "best practices" and "sharing new ideas." However, the end goal is not the promotion on the academic track. Mary likewise doesn't have an interest in "writing," which she views as important for "climbing up in academics." Xena is unsuccessful in encouraging a colleague, regarded as "a role model to a lot of people," to engage in the process of promotions. Xena thinks that "there's no reason why not, except that she doesn't want to do it."

Some participants are reluctant to explore advanced leadership positions because of what these positions would entail. Ursula is reluctant to pursue leadership development courses, or declaring herself interested in leadership. She feels she is unlikely to succeed as a leader because of the administrative support she has. Claire is not interested in leading her work unit in the future, because "I don't want all the administrative stuff." She also thinks that staying in the "academic game," with additional leadership roles and responsibilities, means that "it never gets any easier. It's supposed to get harder, and that's your reward. If you stay in academics, that's what you do."

Jane is wary of the expectations of leaders' availability. She says, that from her observation of those who are "active in leadership" positions, "their leadership style tends to be 24/7." She thinks that this trend has been fostered by "technology" and that overall, "in medicine and in all fields […] we've moved into a 24/7 society." Audrey has similar impressions about the expectations of "24/7 responsibility" for a leader, for which she is not "ready." Olivia also perceives leadership as requiring a significant time commitment, and leaders are those "willing to spend 120 hours" on their roles. She thinks that "more men want to do that. I don't know why they do. I really don't." Nancy explains that her lack of interest in leadership is because she sees her leader as "overextended" which she thinks would be stressful for her. Walda is in a position of influence within her work unit, with the ability for "making decisions" when her "boss is away," without however holding the position's leadership title. She describes this situation as her "safety net to say that I won't tip the balance of time allotted to home life." While she enjoys her role and responsibilities, she is also comforted in the "ability to say, 'Oh, it's night time. I'm just the [associate work unit director]. It's time for me to put my kids to bed and maybe you should call the director.'" Daisy had been told that her achievements would qualify her to be a work unit director or chair "around the country." However, she says "I'm not sure that this is something I want to be," because she thinks chairs or unit directors are

"someone who is like, 'I'm gonna go out and fundraise and get money' […] be able to sell yourself in that way, and that's not me so much."

Other participants view leadership positions as detractors from clinical and patient care. Mary describes a leader's role as going from "meeting to meeting," while for her, "my love is clinical and patient care." Audrey also thinks her current leader spends little time involved in patient care, and she says "it's too little. I still want to be a doctor."

Negotiations. Seventeen participants (63%) describe challenges related to negotiations. However, several (37%) also reported that despite those challenges, they were able to obtain their desired outcomes. Women who are in academic leadership were more likely to describe the relevance of negotiations on their career paths (79%), compared to those in hospital leadership (67%) and those without leadership positions (57%).

Several participants – Audrey, Olivia, Xena, Francis, all of whom have positions of academic leadership, describe starting negotiations after their mind was set on making a career move. They also describe a common response from leaders who were surprised at the expressed frustration. Audrey went to her leader saying "'I'm thinking of leaving and I have these offers.' And he was totally shocked. I mean I don't think he saw this coming at all." Leaders are taken aback by those decisions and surprised that they had not been approached earlier with any complaints. Audrey's leader said "I can't understand why would you even consider leaving," and asked her "why is this the first time you've come to tell me that you're unhappy?"

Xena wonders whether this is because she was not "effective in conveying" her discontent or because she was not "in a position to be really heard." Daisy had been encouraged to "go visit" other institutions, to explore offerings and career paths. However, she feels that it "just takes an amount of energy that I just don't have right now, and I don't really wanna play that game right now." She goes on to suggest that in her opinion, "it's something like maybe men play the game better." Emily agrees that

there is a game to be played of "asking for more than you want to get down to what you want." In her opinion, by not following the unspoken rules of the negotiation game, both women and the leaders end up being frustrated: "women tend to ask for what they want and if they don't get it, they get upset and the chairs or their bosses think they're inflexible." In negotiating her new appointment package, Zoe feels she got what she wanted. However, when her leader readily agreed to all her requests, she wondered if she should've "bargained for more." However, she didn't want to "come across as overly pushy." Tania likewise asked once for an opportunity that she felt was aligned with her career goals. However, she "didn't pester," she "didn't push," and the opportunity was "given to somebody else." Gladys on the other hand, was promoted to her position after asking repeatedly and not taking no for an answer. She says "I don't know how many times I had to ask before finally, 'Okay you can be [initiative director].'" She admits however, that "the title? It was a little important. I was going to do the job anyway."

Olivia has noticed that women faculty "apologized for asking" for a raise in salary, while men were more likely to be forceful in their demands. However, not all participants fit that stereotype. Emily describes approaching her leader saying "You're not paying me that because it's a gift. You're paying me that because I deserve it." However, she acknowledges that there is a "backlash" to her approach, and her leader told her, that because of her directness, she will never "get a high role in leadership."

Women describe situations of implicit understanding of roles and demands, but they often don't have an explicit shared agreement. Audrey says she has not had "an explicit discussion" of what her title or her time commitments should be. She has noticed that she has been freed from some "clinical time" and responsibilities, possibly an "acknowledgment" of the "huge amount of administrative work" she's been doing for her team. Ursula describes herself as "very bad at negotiating." She explains that she doesn't question or seek clarifications when the financial compensation plans don't align with the amount of work she's put in. When asked whether she had discussed her career interests

with her leader, Francis replies: “Obliquely, which means I don’t think that he understood that.” She is not engaging in a purposeful conversation with her leader because she doesn’t have the “bandwidth” to “be prepared” for the meeting. As a first step of successful negotiations, some participants (Jane, Audrey, Daisy) describe the importance of having clarity in knowing what they want for themselves and for their positions. Audrey says “if you don’t know what you want, it’s sort of hard to then ask for anything from anybody else.”

Some participants described being in situations where they felt little ability to negotiate, either because of personal skills or because of the situation. Diane describes being accommodating in her early career, not setting any conditions on her appointment, which she kept for a decade before deciding to move on. She says “after like 12 years, I said I can’t do this anymore.” Yolanda felt frustrated at herself for not negotiating the details of an administrative decision that could have had significant impositions on the team’s schedules and well-being. She says she “felt so angry and powerless to say ‘that’s absurd’,” and she wishes she had “some organizational skills” to question the decision constructively. Audrey describes feeling exhausted after a busy and demanding week at work, and receiving a call from her work unit leader on that Friday evening. He was asking her to lead a new project. She recalls: “he’s basically like, ‘I really need somebody who I trust and I know you’re gonna do a good job.’ […] And he wasn’t like… he wasn’t really asking me, but he sort of was asking me and I just knew that was not the kind of thing I could say no to.” She responded “yes, of course I’ll do it. If you need me I’ll do it,” not giving any sense of how upset she felt. Reflecting on that episode, she says:

> If I had to do that again I would have said to him, ‘Let me think about this over the weekend. Can we talk on Monday so I just make sure I understand the responsibilities?’ And then probably should have gone on Monday and listened to more about it and then […] either negotiated less to do or a clear increase in the salary.

The majority of those who described success in their negotiation outcome are women who are in academic leadership. Of the ten women describing successful negotiations, eight are in positions of academic leadership. According to Olivia, successful negotiations stem from "not underselling" oneself and from "practice." She tells her trainees asking for advice on negotiations, "if they don't give you [what you asked for], it doesn't make you a bad person." Ursula agrees and recognizes that she had "no experience ever" negotiating. She says "you go from being a resident and a fellow where if someone says 'jump,' you say 'how high?' […] And then all of a sudden you're thrown into a position of being on the other side of things and actually recognizing that your time is valuable." Xena similarly describes her experience of being a trainee as being told to "keep your head down, work hard, and don't cause a fuss." Accordingly, the ability to negotiate for what she wants "didn't even cross [her] mind."

Having information helped participants successfully engage and drive negotiations. This means understanding the political environment and the overall strategies. As Xena says, "optics matter." This means for Hannah "you don't get advanced until you get noticed." This also implies individual initiatives are valued depending on how they fit in the overall political system of the organization. For example, Emily thinks that having well defined personal "goals [is] very important" for a path toward leadership, however it is important "to try to align them with the goals of the chair, not to change your goals, but try to show that your goals are supportive of the chair's goals." Audrey similarly says that as someone interested in leadership, "it cannot just be you in your little bubble." She believes that for people to succeed, their interests should "align with the interest of the [work unit]." She considers herself "little more savvy about that," being able to identify the "[work unit] needs" and "making sure […] to prioritize those things." Kate has a similar perspective on aligning interests because, she says, "you are not here to rock the boat, you are here to move the boat further."

Jane recommends understanding the "power structure" in the organization, identifying those with "the decision-making power, and having those people be allies to you." Emily and Irene used this information to successfully request salary adjustments and raises. Ursula is using her understanding of the politics and the financial drive to negotiate for her position.

A few participants recognized the accuracy of previously reported observations that women tend to negotiate better when they negotiate on behalf of others. Ursula says "I do think I'm probably better at supporting others sometimes than looking inside to myself and giving myself that advice." Walda, however, views negotiations as overall "uncomfortable" and undesirable, regardless of outcomes. Thinking about the concept of negotiations, she says she's "ambivalent about: is that the right thing to do?" She debates the concept from both points of view: the individual and the leadership. She says "individually, [it is] right to advocate for yourself and in the end [to] get something you want." However, as a manager and leader she thinks it's not "fair that the person who pushes for themselves gets it, even though the other person who's also just as great doesn't."

Self-efficacy. Twenty-four participants (89%) discussed elements of self-efficacy. Most participants (78%) described a confidence in their abilities and their skills as leaders. In particular women in academic leadership positions (86%) and hospital leadership (100%) were more likely to describe having self-efficacy compared to those without leadership positions (43%).

Overall, participants felt they have a lot to contribute to the institution or to their specialty. Xena clearly articulated that general feeling saying "I have a lot of things that I feel like I could be contributing." However, their confidence in their abilities is balanced against their perspective on leadership requirements. Jane summarizes the correlation between self-efficacy and leadership as follows: "do you feel like you can be confident enough in your leadership that you could do it in your own style, and that wouldn't

compromise your ability to hold the position?" Vera describes her strengths at approaching problem while "staying calm." She believes that, overall, she is "doing a good job" as a leader. Tania describes her journey about managing her reactions to external factors. It is the confidence in her abilities that frees her from the emotional component of her experiences. She describes having experienced a "fear response" in the past when placed in situations of confrontation. However, she says she doesn't have those responses "because I think I've matured a little bit clinically and I'm more confident in myself."

Self-efficacy also manifests in identifying resources to support their careers. For Diane, the confidence in her ability to lead means identifying the resources that can help advance her project further. Similarly, Francis knows who to reach out to in order to advance her agenda, and feels that she's "good at a cold call or a cold e-mail," to someone in leadership. Irene similarly sought out collaborators on the national level to advance her research career. However, asking for help may be perceived by some as a sign of weakness or vulnerability. For example, Vera successfully reached out to her leaders and secured their support in an ongoing project. However, she says "I felt a little weird" to "ask them for back-up." When asked why she felt weird, she replied, "part of me was like 'oh I'm like this little girl asking for help.'"

Eight participants (30%) described elements consistent with low self-efficacy. Patty doesn't see herself as being in a position of advanced academic position, because "that's a very special person" with particular attributes. Asked what would have to change for her to be interested in a leadership position, Patty replies "probably mostly myself." She says that she would need to "get comfortable with it," and "to be passionate enough about" whatever she was doing, hoping that this would make any "negative attention or any negative comments […] worth it to" her.

Xena recognizes the impostor syndrome when it "creeps" in on her thinking, doubting her accomplishments. The impostor phenomenon was described among "high

achieving women" and consists of feeling phony and a fraud "despite outstanding academic and professional accomplishments"(Clance & Imes, 1978). Xena admits that occasionally she will have moments of disbelief, thinking "what have I really done? Do I really belong where I am? Do I really deserve the titles?" She recognizes that she is fitting the stereotype of a woman needing to be "extra prepared for something compared to men." She says that she's "become a lot more conscious of it. But I'm glad that I'm conscious of it, and I'm glad that there's a name for it because that helps me overcome it when those thoughts kind of creep in." Audrey has similar thoughts and catches herself saying "you're not that exceptional," wondering "am I gonna be the one of these handful of people that actually makes it up here?" Xena shares the advice of a senior woman in her specialty of doing the best work, of being well prepared, and if not successful, to "keep going," to "try several times" and to not give up.

Gender stereotypes. Ten participants, most of whom are in positions in academic leadership, discussed issues related to gender stereotypes. These issues fell under two categories: manifestation of gender stereotypes, and response of the participants to perceived or experienced gender stereotypes.

Diane wonders if some of the women in leadership in medicine "got there" because they are "brash and a little masculine." Zoe on the other hand wonders if she should've asked for more and earlier. However, she knows that she "also doesn't want to come across as overly pushy." Zoe also wonders if the choice of specialty is guided by gender preferences. In her opinion, women choose specialties that support "lifestyle choices" of limited hours and absent emergencies, or specialties that are guided by "compassion […], this idea that we're doing the right thing for people, and that money doesn't matter." Olivia has noticed from experience that women avoid being in the spotlight, and she describes her observations as follows: "I think women tend to be more passive. I think men are much more outspoken and women tend to sit back and not get into the frame. If there is a frame, they back off." Emily thinks that women are more

likely to "succeed if they're sweet talkers, they're more in the background." She acknowledges that, in her interactions with others in academic medicine, she doesn't fit that mold of "true female." She believes that women are hurt when they don't fit that expected gender stereotype.

The response to gender stereotypes starts by an acknowledgement of their presence and a deliberate decision to manage them. Xena understands that her female patients appreciate being able to "talk to a woman [physician] about their concerns." However, she doesn't want to be limited in that view: "I think it matters, and I think it's important, but I don't want that to just be my only identity." She also resists being seen from the lens of the expected behavior of a woman in leadership: "being more communal, and collaborative." She continues to describe how she refuses to fit the stereotype molds but that she "knows what I want." With a similar perspective, Beatrix shares that she's been told that her "problem is that [she] doesn't feel the need to be liked." She agrees with that assessment and says she doesn't "think the world moves forward when people just try to be liked." Claire feels similarly that she has "compartmentalized" her work and life personas; she believes that those who want "to be liked" and "who care more about whether they have friends at work," have a more difficult time adjusting. Audrey, as the only woman in the leadership "circle" in her work unit, feels that it's her responsibility to avoid feeding into prevalent gender stereotypes of women in leadership. She says "I get tired of always feeling like I need to be so careful […] I don't want anyone to think I'm overly emotional or I'm being a bitch." Sarah says she hasn't personally experienced any gender bias or stereotypes in the workplace, however she is aware of their presence. She agrees that "it's how you handle these things that is so much more important" than their presence. Beatrix thinks that women's behaviors are expected by others to be driven by emotions, and she says: "I started to realize that for women, they want you to react. The best thing for us [as women] is to not react." She believes the best approach is for women to "stay calm, be more thoughtful, and try not to express" emotions too much. However,

she thinks that others "are threatened by those" women who don't conform to the expected gender stereotype. Gender stereotypes may even extend into physical appearance and dress code expectations. Daisy thought about how she should dress for her new position, and then decided to be herself: "I'm just gonna be me, like, girly. I am who I am."

Finding #3

Making a difference and patient care were most frequently described by participants as the rewards in a career path. Negative impact on personal wellness was often considered as a sacrifice of academic leadership.

Participants in this study were asked about the rewards and sacrifices that they have encountered, or that they anticipated on a path to leadership.

The balance between the rewards and the sacrifices that positions of leadership offer was best described by one of the participants. Jane summarized the competing forces between the attraction of having influence, a title and recognition, and the apprehension of time commitments and expectations of leadership. She says "the question is: how can you carve out a leadership position that allows you to do most of the things you really want to and less of the things that you don't? And I think that's a real legitimate challenge."

Rewards

Participants discussed the various rewards on a career path. The summary of finding 3 is presented in Table 9, and the details of the distribution are described in Appendix L.

Table 9. Summary of Finding #3 – Rewards

Rewards	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Making a difference	**20 (74%)**	**10 (71%)**	**4 (67%)**	**6 (86%)**
Patient care	**20 (74%)**	**10 (71%)**	**3 (50%)**	**7 (100%)**
Training and education	**8 (30%)**	**5 (36%)**	**1 (17%)**	**2 (29%)**
Recognition	**9 (33%)**	**5 (36%)**	**3 (50%)**	**1 (14%)**
Interpersonal relations	**10 (37%)**	**6 (43%)**	**2 (33%)**	**2 (29%)**
Promotions	**4 (15%)**	**3 (21%)**	**1 (17%)**	**-**

Gladys offers her perspective as "it's much better to be the one telling other people what to do than being told what to do." Several were reluctant to identify leadership as the reward on a career path. Instead, they describe the importance of feeling accomplished. Thinking about what's important for her on a career path, Tania says "I don't know if it's necessarily a leadership role, but it's a path to accomplishment. If I feel like I'm accomplishing something when I'm at work, then I feel like I'm putting more value in my time away from my children."

Making a difference. Twenty participants (74%) discussed elements related to making a difference. In particular, most participants discussed making a difference in the workplace, regardless of their position of leadership.

As Francis decides on the degree of her involvement, she identifies that "a tangible goal is people's lives are actually altered. You actually get physicians who are engaged and resilient and flourishing and make the whole hospital better place." Jane finds the most rewarding aspect of her career is "helping other people reach their potential." Similarly, Xena describes as rewarding the ability to work with leaders to "try to develop programs that would benefit the women who work" in the study center. Rachel describes her contribution as making small moves to improve the overall system. She says "I can see myself transitioning into some sort of role that would allow me to

move the chess pieces around to make the system work better." Similarly, Jane has enjoyed in roles in committees that allow her to speak on behalf of her team "because I think it's important for [my specialty] to have a voice at the table." Olivia also wants to expand the make-up of the people who have a voice at the table, in order to increase diversity.

Likewise, Claire is more interested in a position of influence rather that in a title. She says "I don't know if the title really matters to me all that much. It's just more a matter of having some sort of official role there, so that I can have some sort of influence" on the processes involved in her area of interest. Beatrix also thinks that not being in the position of leadership allows her more freedom to influence "pushing the agenda." Olivia however believes that a title is important to achieve legitimacy and she says: "sometimes having that voice comes with a title, because otherwise nobody will listen to you." Nancy, who is not in a leadership role, perceives that to "be able to make changes" is one advantage of having a leadership position.

For some, making a difference in their kids' perspectives about working moms is also important. Mary says that even though her dependent says that she "wishes I didn't have to go to work, wishes I could stay, but at the same time she […] wants to be a rock scientist, or maybe someday she's going to be a [physician] too, which is really cool."

Patient care. Twenty participants (74%) described patient care as a rewarding aspect of their career. In particular, all seven participants without leadership role described their engagement with delivering patient care.

Asked what she finds rewarding in her career, Diane replies that what "I really enjoy every day is, you know, talking to patients, thinking about their cases […] what we see here [in the study center] as you know is like the most complicated stuff, right? And […] it requires such creative thinking." Those in the surgical fields say they "enjoy operating." When asked what she feels most rewarding, Carla talks about watching her dependent "perform on the cello, and I'm just beaming with pride." However, she says

she also feels "really happy" when she successfully manages a medically challenging condition, or tries a new approach to patient care that "no one's done before, […] I had to come up with some really crazy solutions and it was really fun. I really loved doing that, too." Emily also says, referring to her work within her specialty, "I love what I do."

Sarah describes that as "to get up every morning and be happy to come to work." Nancy describes her "intention" for going into medicine was "always to be a good doctor." Zoe is proud that her team was able to overcome the interpersonal challenges to focus on the patients. She says "we actually came together and did a really good job taking care of patients." Yolanda describes as most rewarding "the interesting things that I know and that I can bring to my patients and my academic community." Jane describes herself as passionate about her work and that "the reason I went into medicine is to take care of patients." Emily says "only thing that made me happy is my patients and my practice." Audrey describes "seeing patients" as a "pure joy." Claire feels appreciated by her patients for taking care of them and she says "I feel like I have the most grateful, amazing patients ever" who think that she in turn is "amazing." Patty describes one of her strengths that she "can read people really well." Being in tune with her patients means she can provide her patients and their families with a better experience. Patty, who is not in a leadership position, was asked what a leadership role would look like for her to be interested in pursuing it. She reflected on the importance of influencing patient care, and described such leadership position as follows: "What I would like it to look like would be something that was a very high impact on outcomes or on patients. Not necessarily… I mean, I don't need to make it better for me."

A few participants described their interest in helping "underserved" populations, either in the community, or beyond. Emily says "I feel that we have responsibility to the underserved." Nancy would consider a leadership that serves her goal. She says: "that's always been my goal is to work in the underserved community." She also says: "If you want to talk about leadership, I would love to be a leader in medicine for particularly the

patients" who may be at a disadvantage in the healthcare system because of language barriers. These barriers turn into lack of "culturally sensitive" resources. Patty reflects on possible leadership roles that she could take on in the future, and she describes them as having an impact. She thinks it would be "a leadership role at an organization where we did do missions and travel, and being the leadership in terms of [medical] provisions for that. You know, something where you make an impact. You can have a real positive role in people who want to do things that are nurturing and providing and helping [others]." Diane sums up her perspective on what drives her approach to patient care saying "You just have to do the right thing, as painful as it is. […] That's been the mantra in my head when it becomes really painful. You just have to do the right thing."

Kate doesn't consider scaling back her work, because she feels her time is "wasted" when not made to use toward work. She says "I don't like [having extra time], it depresses me I think. […] whenever I get academic time off and I don't have any research going on, I just feel wasted I guess. That I am not doing anything fruitful at this time." She also notes that her commitment to her work activities is not taking away from her family. She describes the day as "this is time set for my children that I always have a babysitter, so they don't need me that much also at this time." Audrey enjoys her responsibilities in administrative role, managing the "clinical operations stuff […] I kind of enjoy trying to look at the division in a big picture way and figuring out the strategy."

Sarah encapsulates these feelings saying: "I'm definitely of retirement age. I'm not of […] retirement temperament, because I'm having too much of a good time."

Training program. Eight or 30% of participants describe their involvement with trainees as a rewarding aspect of their careers. Women in academic leadership positions were slightly more likely to indicate these interactions as rewarding compared to those in hospital leadership or no leadership positions.

Mary describes her role in educating trainees as "really fun" and "I love working with [trainees] and teaching." Jane describes herself as "very passionate about [her

leadership] position, and really wanting the best experience for [her trainees].” She likes to use her role to make sure “the fellows will also have that same appreciation of taking care of patients and doing a good job,” as she does. In addition, she sees this as her way to make a difference, “being able to teach” her trainees, and “then they go out, and they take good care” of patients. She describes that as “like a multiplier effect, that you feel like what you’ve done makes a difference.” For Olivia, it is very rewarding to witness the career path of the trainees from their first day as applicants to her program till their graduation day. She’s invested in making sure they are making the right career choices, and she reminds the applicants “when they come, […] ‘we’re not here to make a [specialty physician], we’re here to help you find something that you’re gonna wanna do the rest of your life, that’s gonna make you happy.’” Rachel also describes her interaction with trainees as follows: “helping other people find their feet and be great at whatever it is that they’re trying to do. That is an incredibly broad statement, but that’s what excites me.” Ursula describes the “positive feedback” she received from her trainees as a rewarding motivation “to work with them and just continue to try to do a good job for them.”

Recognition. Nine participants (33%) describe being recognized for their skills and contributions as rewarding. Women in any leadership position, whether academic or hospital-based, were more likely to describe this as rewarding (40%), compared to those without leadership positions (14%).

Hannah, who is not in a leadership position, doesn’t care much about achieving a title, even if it is “in and of itself […] satisfying and rewarding.” Instead, she says “I just want to be good at what I do. I want people to like and respect me.” Rather than a title, it is more important for her to be “happy and satisfied and getting external recognition for the work that I’m doing.” Similarly, Sarah doesn’t care about financial gains. She says “money has never been a big deal for me.” However, she also perceives that “money means that you are being acknowledged, that whatever it is that you’re doing is

important." This acknowledgment is important because, in her opinion, "you can do all kinds of projects and all that, but if nobody acknowledges the importance of it, then what's the point?" Zoe raises a similar point. She says "I don't think I'd be happy if I made [more] money…But at the same time, I don't want to be devalued."

Diane found that the most rewarding aspect of her leadership position is feeling "like [she] had a lot of respect" from her colleagues and from those she was leading. Yolanda enjoys the "interactions with people," whereby she was told by other healthcare professionals "we're so glad to have you back here. It's so nice to work with you." She says that "felt great." The recognition of Tania's work from leaders in the institution "helps create the energy to keep doing the work." For Gladys however, a formal recognition of her role was only "a little important." She took on the responsibilities prior to securing a title and she says "I was going to do the job anyway."

Recognition as an expert in the field can be facilitated by having peer-reviewed publications. Eva described writing, publishing, and being cited for her work as "gratifying." Tania, who is not involved in research, is nonetheless surprised at how "excited" she was to have a major peer-review publication. When the opportunity came for writing the academic paper, she took it "to just get my name out there and just work on something." When the paper was published, she says "it's kind of weird that I value that moment pretty highly." She also describes as "rewarding" to her in her career, when she was recognized as an expert physician, and was asked "to take care of [the] family members" of colleagues that she in turn "held with very high regard of their clinical skills."

Interpersonal relationships. Ten participants (37%) described the rewarding aspect of interpersonal relationships. Women in academic leadership were slightly more likely (43%) to discuss the rewarding aspects of interpersonal relationships than those in hospital leadership (33%) or those without leadership positions (29%).

Yolanda says that she tries "to find rewarding things in life, things that made [her] feel good." For her, that often meant "personal relations at work and personal relations outside of work." Mary also describes her work unit as "very good group in terms of dynamics and working together. I love them!" Jane says that "being around people I care about, whether that's work or home, friends" is important to her. Eva enjoys "mentoring" other faculty on their career paths. Audrey finds herself as a role model for other women in her work unit and she finds that "intimidating." She explains that "you sort of realize people are looking to you as a role model and you want to make sure you act that way and succeed." Daisy "finds meaning" in what she's doing, when she engages in "mentorship of younger people, or people your peers who just need […] more support in some way or another or just camaraderie."

Promotions. Only four women (15%) described the rewarding aspect of getting promoted. Those were participants who held positions of leadership, either academic (3) or hospital-based (1).

Other participants who discussed promotions did not appreciate their rewards. For Francis, getting promoted does not provide enough drive in itself. She says that "the end goal is not becoming associate professor and then professor. Because I don't see the benefit… risk/benefit." Hannah is also not convinced about the value of promotions. She says about the academic rank: "it's not like it comes with money, right? And it's not like it comes with more time or…. In other words, there's no real reward other than the title itself." Walda feels the concept of promotions is an artificial definition imposed on her, or in her words "someone else's arbitrary definition of what is success." For Audrey, not having a title doesn't bother her, as long as she feels that "there's an acknowledgement" of what she does for the team "that's worth something to them." Xena on the other hand feels that for women in medicine, titles and promotions are "a way of demonstrating how hard we worked, and we accomplished." Similarly, for Zoe, a position of leadership "means a lot." In her opinion, it means "that people trust my leadership and trust my

abilities. To be asked to do these sorts of things means that somebody thinks I have the qualities and knowledge and expertise to be involved in this at that level." Walda also feels that there isn't a "way to avoid" engaging in the promotions. She thinks that despite "looking internally for validation of how great, how accomplished" and "how valuable" she feels, "there's always that external validation" through promotions that's needed.

Sacrifices

Francis reflects on people around her who have achieved promotions, or tenure. She says "I don't want that life! The sacrifices that it took them to get there!" Conversely, Xena describes all her willingness to offer those sacrifices for the "greater good." Conversely, the sacrifices Irene is experiencing may be a deterrent to other women for joining her specialty. She says "I've had a lot of women come up to me and say 'I don't want to do this [career path], because I see what you're doing and I don't want this.' I feel sad about that." Overall, the sacrifices women perceive or experience on a career path can be categorized in relation to sacrifices in: personal wellness, time, and patient care. The summary of the finding is presented in Table 10 and in Appendix M for more details.

Table 10. Summary of Finding #3 – Sacrifices

Sacrifices	*Number of overall participants N=27 (%)*	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
Personal Wellness	**16 (59%)**	**9 (64%)**	**2 (33%)**	**5 (71%)**
Time	**15 (56%)**	**10 (71%)**	**1 (17%)**	**4 (57%)**
Family time	11 (41%)	7 (50%)	1 (17%)	3 (43%)
Personal time	7 (26%)	5 (36%)	-	2 (29%)
Patient Care	**7 (26%)**	**4 (29%)**	**-**	**3 (43%)**

Personal wellness. Sixteen participants (59%) described the perceived sacrifices made for their own personal physical and emotional wellness. 71% of women with no leadership positions discussed these experienced sacrifices, compared to 55% of women in any leadership position. When Claire moved to her new work and environment, this imposed a stress on her dependents and other family members. She describes it as "we were having a really hard time. When I first came here, I knew that in that insecurity, I was extremely volatile." Claire says "I was a very sweet, quiet, shy person before I went into [specialty]." However, she now describes having a "notoriety for being a bitch." When asked how she feels about that, she replies "I don't know anymore." Olivia describes herself as having felt "miserable" early in her career, while working in a unit and with a leader she describes as "nice guy, but a horrible leader." As a result, and despite seeing herself as an "eternal optimist," she was "thinking of leaving medicine" altogether. Emily also uses similar terms describing a frustrating, and seemingly unfair situation, leading her to consider leaving. She says "I was miserable for a long time and the question is should I have left at that time and I don't know what was the right answer." When work schedule changes were imposed on her, Yolanda felt "angry, sad" and also felt "hopelessness, in not being able to control my work life, vis-a-vis my home life."

Patty describes her situation with a new baby at home as "we're coming out of the fog." Daisy describes the past few years of her life as "it's all a haze." Moreover, in striving toward a work-life balance, she says "there isn't ever time for me," and she notices "I don't have a hobby, I have no time for hobbies […] there's also no time to rest." Irene's commitments to research and to clinical work make work-life balance challenging. She describes spending most of her time on work-related projects. Yolanda shares similar impressions about her early career years. While trying to juggle research productivity and clinical assignments, she describes her emotional state as follows: "I ended up being frustrated and being unhappy because I was a jack of many trades and a

master of none." Wanda describes being at a tipping point, where she enjoys her current status and responsibilities, but that if she "took on more responsibility, then [she] would be less happy."

A few women even described feeling burned out because of work commitment and the challenge to effectively juggle work and life demands. For Mary, the burnout is a risk when "running too much clinical stuff at once." For Francis, burnout happened after a long stretch of an academic commitment that took time away from her family, and for which she worked "8 p.m. to 10:00 p.m. every night, for weeks." For Vera, burnout was a threat because of the busy clinical load and the added administrative work of "dealing with insurances."

The combination of having kids and work may further impact women's wellness. Lack of sleep affects the wellness of the physicians who are expected to engage cognitively and emotionally during the day as well. Irene says that she is sometimes "sending out emails at 3 a.m. or 2 a.m." Jane reports that "if I'm not well rested, I just don't feel healthy and well." Daisy also describes her experience as "war stories" which she "survived." She feels disappointed and feels "terrible telling people that that's the answer: that you just work at night, and you have to be really effective during the day, which can be hard, […] then you work on the weekends after the kids go to sleep." Similarly, Beatrix describes returning to work "within three weeks" of giving birth, "brain dead and tired." Audrey reflects on the daily demands of her life and realizes "what a strain it is, subtly, on my brain all the time." Mary also talks about feeling burned out when her child "would wake up a couple times a night." Accordingly, she says "I don't think I slept a solid night for two solid years."

To counter these influences, some women adopt deliberate measures to seek personal wellness. For Patty, time for personal self-care and growth is an important aspect of the balance between being a professional and being a mother. She says "I think especially with young children, you can lose sight of your own individuality, and being

yourself as not just a mom or a spouse or an employee." Patty is deliberate in "trying to work on" her "own health," whether it's through "exercise" or "mental health." She says she tries to "develop [her] own interests a little bit more, […] trying to be your own person and trying to make myself have an identity outside of" the "job and family". In her opinion, "everything you do that's good for yourself is clearly of benefit to your kids, because it's setting a good example for them."

Time strains. Fifteen women (56%) described a sacrifice in available time, whether personal or family time. 71% of women in academic leadership discussed this sacrifice, compared to 17% of those in hospital leadership and 57% of those without leadership positions.

Family time. Eleven participants (41%) described sacrificing time with family because of their work or careers. The majority of participants who discussed this sacrifice are in leadership, in particular academic leadership positions. Hannah believes work does not "get [her] anything at home. My kids think I work way too much." Francis says that her work schedule had made it difficult for her to participate in school events for her young children. Mary says she would be interested in leadership if "it didn't take more time away from my kids. […] I wouldn't sacrifice time at home." Claire acknowledges she "made a sacrifice," uprooting herself from close family to pursue her current academic career.

Olivia describes her career as having been work-focused, and "it's always been work first." She feels she got to a point of realizing "Ah, I forgot to have kids." She continues to say "I am sad that I never gave myself that opportunity. I don't ever want people to be in that position where they suddenly wake up and nobody ever thought about it before them." Olivia views an advanced leadership position as impinging on her family life, which she refuses to sacrifice. She says "I have too happy of a personal life and I travel too much. […] No way of giving that up." Reflecting on the implications of career advancement, she adds: "I have a pretty good life and there's no way that an

advancement would not change that." Xena says "I don't think anyone can have it all. I think you can just choose what works or doesn't." She believes one "can choose the proportions" they allocate to the different parts of their lives. Audrey describes being deliberate about protecting her time with her family by putting phones away or delaying completing medical notes. She thinks it's important "because otherwise I just feel like it comes into the house, the email is always there, you're always doing stuff. And the kids sense the distraction and I don't think it's good."

Personal time. Seven participants (26%) describe loss of personal time. When asked what has been most challenging in her career, Daisy says "maybe it's the work/life balance, in that there isn't ever time for me, like what do I wanna do." She says "we've gotten to this place where […] I don't have a hobby." She continues to describe that whenever she does have the time, "it's never […] what I should be doing" but rather "I should be working"; if she doesn't, then she feels "guilty."

Francis feels that additional work responsibilities would be difficult to manage: "I can make the time at the expense of my family, or I can make the time at very inconvenient times for myself." Overall, she feels she doesn't have the "bandwidth" to take on more, because her "home life is so full." Francis describes leaders in academic medicine as having "spent years of [their] life getting the grants and do the research." She says this is not what she envisions for herself. Patty, while acknowledging other barriers to an interest in leadership, says she would consider such a role if it didn't entail a significant time commitment. She says "if it was something that didn't require excessive amounts of time, then I wouldn't necessarily be opposed to it." Vera wonders "how people do it," as she describes having to complete medical records for the week, and prepare lectures. In addition, research involvement requires additional dedicated time.

Independent of family demands, work requirements and inefficiencies consume valuable time for the participants. Eva says that the research time "always ends up being on your own time, it ends up being on the week nights, on the weekends." Daisy similarly

describes how she "would stay up at night a lot working." Zoe is sacrificing her time and potential productivity for helping others in the center taking care of patients. As a consultant, she is sought out to give her expert opinion on medical conditions through unofficial consults that are not reimbursed. However, this work "doesn't show up on a spreadsheet, that's […] returning phone call after phone call to other faculty members who just ask" for her opinion. She says "I wish the hospital […] leadership had a way to quantify it because it's these soft things that a lot of us women do more commonly than men."

Taking away from patient care. Seven participants (26%) described their perception that advanced leadership positions would come at the expense of clinical work. This perception was more likely to be described by women who are not in leadership position, reflecting the apprehension rather than the experience of the sacrifice. 43% of women who are not in leadership position suggested the negative impact on patient care, compared to 25% of those in any leadership role.

Audrey feels that administrative roles can take away from her ability to be involved in patient care. She says the leader in her work unit spends only a few weeks every year caring for patients. She comments "it's too little. I still want to be a doctor." Similarly, Mary observes that a leader at her center "goes from meetings to meetings." However, she still feels that her "love is clinical and patient care." Olivia is not interested in more advanced leadership positions because she says: "I'm very much 'boots on the ground.' I like taking care of patients." Ursula similarly feels part of her job entails administrative work, and she "enjoys that less." Nancy notices that leaders around her "are always constantly running back and forth trying to get this and that done, and I feel like often they take on less responsibilities for their patients." Patty observes that leaders in the medical field don't have extensive patient involvement. Conversely, Sarah is now considering to scale back and she describes that as follows: "what I'm really actually looking to get rid of is more the administrative stuff, and just be clinical."

Finding #4

All women discussed learning to navigate their career paths through informal ways of learning, such as learning on the job, from experience, and from professional networks

The learning paths of participants in this study are explored using the framework described by Poell and Van der Krogt (Poell & van der Krogt, 2014). As participants described their learning paths, it became likely, as Kate's describes it, that the learning was incremental, unfolding "one step at a time […]; it happened over a period of years." Similarly, Eva believes that "you learn a little bit at each phase" of a career path. Ursula sees the "learning about leadership" as "ongoing."

The findings of this research related to learning are presented as: learning themes, learning activities, social learning context, and learning facilitators. The findings are presented in Table 11 and described in detail in Appendix N.

Table 11. Summary of Finding #4 – Learning Paths

	Number of overall participants N=27 (%)	*Number of participants with Academic Leadership n_1=14 (%)*	*Number of participants with Hospital Leadership n_2=6 (%)*	*Number of participants with no leadership position n_3=7 (%)*
LEARNING THEMES				
Managing Tasks	**21 (78%)**	**12 (86%)**	**4 (67%)**	**5 (71%)**
Process & Admin	19 (70%)	12 (86%)	3 (50%)	4 (57%)
Technical & medical	5 (19%)	-	3 (50%)	2 (29%)
Managing People	**14 (52%)**	**7 (50%)**	**5 (83%)**	**2 (29%)**
Relations	13 (48%)	7 (50%)	4 (67%)	2 (29%)
Communications	6 (22%)	2 (14%)	4 (67%)	-
Managing Self	**14 (52%)**	**7 (50%)**	**4 (67%)**	**3 (43%)**

Table 11 (continued)

	Number of overall participants N=27 (%)	*Number of participants with Academic Leadership n1=14 (%)*	*Number of participants with Hospital Leadership n2=6 (%)*	*Number of participants with no leadership position n3=7 (%)*
LEARNING ACTIVITIES				
Informal	**24 (89%)**	**12 (86%)**	**6 (100%)**	**6 (86%)**
Self-directed	17 (63%)	9 (64%)	4 (67%)	4 (57%)
Experiential	16 (59%)	9 (64%)	3 (50%)	4 (57%)
Reflection	14 (52%)	7 (50%)	5 (83%)	2 (29%)
Incidental	10 (37%)	4 (29%)	4 (67%)	2 (29%)
Non-Formal	**19 (67%)**	**12 (86%)**	**4 (67%)**	**3 (43%)**
Mentoring	14 (52%)	7 (50%)	4 (67%)	3 (43%)
Workshops & meetings	12 (44%)	10 (71%)	1 (17%)	1 (14%)
Communities of Practice	10 (37%)	7 (50%)	1 (17%)	2 (29%)
Formal	**6 (22%)**	**4 (29%)**	**2 (33%)**	**-**
SOCIAL LEARNING CONTEXT				
Self	**13 (48%)**	**7 (50%)**	**3 (50%)**	**3 (43%)**
Partners & Family	**11 (41%)**	**6 (43%)**	**3 (50%)**	**2 (29%)**
Colleagues	**24 (89%)**	**12 (86%)**	**5 (83%)**	**7 (100%)**
Peers	17 (63%)	7 (50%)	4 (67%)	6 (86%)
Leaders	11 (41%)	5 (36%)	2 (33%)	4 (57%)
Trainees	3 (11%)	1 (7%)	2 (33%)	-
Medical Societies	9 (33%)	6 (43%)	2 (33%)	1 (14%)

Learning Themes

Medical school and training years were focused on learning clinical and medical knowledge. None of the participants had a formal exposure during their medical school training on topics relevant to leadership. As women integrate the academic center as faculty members, the need for professional development and for leadership skills becomes evident. Claire observes that when physicians leave the academic field to "go private [practice], their professional life plateaus." Instead, when they choose to remain

in academic medicine, the participants are likely to engage in learning opportunities to develop the skills, knowledge and attitudes needed for the advancement of their careers. The following learning themes were explored during the interviews: learning to manage tasks, manage people, and manage self.

Managing tasks. Twenty-one participants (78%) discussed how their learning revolved around acquiring skills and knowledge to help in performing the various tasks of their academic appointments: administrative tasks, and technical or medical tasks.

Processes and administrative skills. Nineteen (70%) of participants described engaging in learning to develop their skills and knowledge about administrative processes. In particular, 86% of women in academic leadership positions described learning activities consistent with this theme. This approach means according to Walda that she is a "problem solver."

Hannah contemplates having an administrative leadership position in the future. She recognizes that understanding the finances and the management of the overall work unit will be needed. She says "there is so much stuff I don't know" about the operational aspect of the unit, however she doesn't think she has to learn about these details "years in advance." Tania reports that she is "still learning how and who to talk to," in identifying resources to help her in her projects and in her current leadership position. Eva, on the other hand, is implementing "processes and accountability" changes in her work unit. This has been a "learning experience" for the members of her unit, as they "adjust to" those changes. Walda says:

> There's part of my job which is finance, business, stuff that I never anticipated I would ever get involved in, money. Some people have been joking with me, some of the administrators, that I'm basically getting an MBA on the job. But and that stuff is interesting to me to a certain degree.

Rachel describes that an "administrative-related project," on which she is collaborating with others in the hospital system, is keeping her "a little bit busy." Gladys describes learning from her reading about approaching administrative and committee

assignments, about saying Yes and learning to say No in a productive way. Kate relies on internet searches for tips to develop her organization skills at home and at work. She says about the process that it wasn't overnight, but that "it happened over a period of years." However, she succeeded and describes herself as "pretty efficient." Vera wants to learn to overcome the various challenges she is facing in her training program, in particular the logistics of trainees' curriculum development.

Technical and medical. Mary describes that as junior faculty starting in practice "you make mistakes and you don't have all the answers to all the clinical things you face." She thinks working with "experienced colleagues" is helpful while she advances on that "learning curve." When participants were managing medically challenging cases, they turned to more experienced colleagues for advice. Likewise, Nancy seeks the help of a senior colleague for statistical analysis of her research projects. Francis describes the difficulty learning how to write for an academic project that was "a bigger book chapter than what [she'd] written before." This included "researching this particular topic in this depth."

Managing people. Thirteen participants (48%) described themes of learning related to managing others. Women in positions of hospital leadership were more likely to discuss this learning theme (83%) compared to women in academic leadership (50%) and those without leadership (29%). This learning theme included managing relations, and communications.

Relations and expectations. Thirteen participants (48%) described learning on how to manage relations and setting expectations. Eleven of those participants were in positions of leadership, whether academic (7) or hospital leadership (4). As Walda established herself as a skilled problem solver in her work area, she reports that she started "getting problems thrown at me that I couldn't fix, or that weren't fixable, or that maybe were less of a priority." In order to protect this productivity and to define her role, she learned to "pace" herself, and "everyone else," and to "set expectations" for those

around her. This includes deciding "when to step in, [and] when to say something." Jane learned how to manage difficult relations while working on a team project to which she dedicated "an incredible amount of time" and felt that she was "being demeaned a bit by the people in charge." From that experience she says she was able "to learn about working with someone who was taking advantage of what I was doing and how to say, 'No, you've crossed the line. That's not okay.'" Gladys learned to manage relations with her colleagues by observing and experiencing "the destructive" effect of her leader's behaviors. She learned to "really just be open and not let your boss suck you in as you're the favorite."

Communications. Six participants, all of whom are in positions of leadership, described learning how to develop their communications skills. Kate says "my communications are not bad, but they're not at the point where I would like them to see at this point, but I'm working on them." She is deliberate in developing her ability to inject her "public speaking" with "humor." She thinks that having a good "sense of humor" is an essential skill for effective communicators. For Gladys, connecting with people meant overcoming her natural shyness. She says she realized that "if you ask people about themselves they generally talk and then it's easier" to establish a connection. Walda is wondering how to use communications, and how to "leverage" the "voice" of her boss to advance the agenda of her work unit. For Claire, this meant promptly getting what she needed for safe patient care in emergency situations, and reaching the point where other healthcare workers "hear the change in my tone, they're more tuned in to it." Yolanda describes the importance of her experiences in learning for "solving problems, improving communication skills," and having "less emotional responses to challenging situations."

Managing self. Fourteen (52%) participants described activities related to managing their personal approach. Eleven of those participants hold positions of leadership, academic (7) or hospital based (4). Patty, who is not in a leadership position, describes the influence of her experiences on shaping her current self. She describes

participating in a training program as "a pretty formative time in my life […] because without that you would be a totally different person." Through reflection on her experiences, Tania learns how to "tame" some of her behaviors, to improve her skills and to establish better relations. Claire says that through a combination of her development and the feedback of her mentor she feels she has "matured significantly." Similarly, Jane described learning the need and the ability to stand-up for herself. She describes her experience of "working with someone who was taking advantage of what I was doing and how to say, 'No, you've crossed the line. That's not okay.' But if I could save someone from having to go through that experience, it would be good. But sometimes I do think you have to learn it on your own instead of someone just telling you." Yolanda also describes learning to modulate her leadership approach from "observing other people manage issues." Xena has learned how to steer her leadership style "to make sure that people's voices were heard," because she has observed this as lacking, and "not really having that in the leaders" around her. Similarly, Hannah appropriates the traits she admires in other leaders. She says "you pick and choose what you like about a person and what you want to incorporate into your own self and what you think doesn't work so well."

Learning Activities

The learning activities in which participants engaged are categorized according to the previously described model. This includes: informal, non-formal, and formal learning activities. Informal learning includes self-directed learning, experiential learning, reflection, and incidental learning. Non-formal learning consists of mentoring, workshops, and communities of practice.

Informal learning. Twenty-four participants (89%) described learning that emerged from informal activities of learning. This was reported by participants regardless

of their leadership status or position. This includes self-directed learning, experiential and reflection, and incidental learning activities.

Self-directed learning. Seventeen participants (63%) described engaging in self-directed learning activities. Self-direction was evident in identifying the topics for learning, in identifying resources, and in managing the learning activity.

The themes of learning were related to improving self or improving the work unit. Kate, who is not a native English-speaker, decided that in order to communicate more effectively, she should be adept at using "American slang language." She accordingly searched for online tutorials and videos related to her topic of interest. Nancy describes approaching people with her career interests, and asking for recommendations. As a result, "people gave [her] some good advice and [she] started meeting people." In addition, she emphasizes the need to "know where you are and what resources you have, and the mentorship you're going to be able to [get]." Irene reaches out to those who are in leadership positions to identify strategies to promote her visibility.

Rachel did "a whole lot of canvassing" to explore how to optimize her training program. Vera seeks other physicians in similar leadership roles to "talk about things," and how different programs approach challenges differently. Similarly, when asked how she found her current mentor, she says "well, I asked around." Gladys also advises women to be proactive and to "go to look for somebody who can mentor" them.

Audrey describes how she manages her learning and her career. She describes her process as follows:

> I usually would write down, what were all the things I was doing. And I would kind of divide it into research, teaching, administration, clinical. And I just made a list and these four categories and was kind of looking at it thinking about what did I want to do less of, what did I want to do more of.

She then proactively approaches her leader, requests meeting time, and discusses this list with him to decide on future steps and engagement. Tania similarly describes "started

working on a path to build myself up." To support her interests, she initiated meetings with her leader and "meeting with other people and announcing that I had this path that I wanted to follow on."

What drives the self-direction is an innate interest in the activity and the learning. Hannah sums it up as follows: "everything that I am involved with has been things that I have gone to find." Claire compares the academic pursuit to "being in the girl scouts." In her opinion, learning in academic medicine is driven by wanting to "get that next badge," and wanting to "get better." Walda describes how she became committed to her area of work. She remembers thinking that the topic was "amazing," and years later, to "go back" and explore "what is it that I keep getting excited about." She described the last step as "finally, committing myself to doing, spending time on it." Eva reads about relevant issues and engages in "reading some of the books about healthcare, business aspects and things."

Experiential learning. Sixteen participants (59%) described learning from their experiences. Women in academic leadership positions were slightly more likely to describe engaging in experiential learning activities (64%), compared to those in hospital leadership (50%) or those without leadership positions (57%). Technical skills, including academic writing, are learned by experience, involve a learning curve for developing the skills, and are refined with practice. Francis describes learning how to write academic papers while doing it. She describes a "learning curve," which she defines as "the first time you do something you're not good at it," but that in the future, she anticipates that she "would be much faster." Claire thinks that the only way to learn is through hands-on, on the job experiences, "by taking that leadership position and getting better because of it." Zoe similarly believes that the way she's learned was by being "left alone." Kate anticipates that to develop her communication skills, she "will learn from my mistakes and make it better with time." This means having experiences and being in positions that force her to learn. She says: "until I have a real responsibility, it is difficult for me to get

better. […] I like more being practical with hands on experience, I learn that way more." Similarly, that means for Eva "every time I assume a new role I learn something new." When asked how she learned to manage the complexities of her position, she replies "just by doing it." Yolanda feels she has "learned so much from each of those" work experiences and responsibilities. Walda's responsibilities include managing the finances of her work unit, which she has been learning through her daily experiences and which supplant the need for a formal degree. She says "some people have been joking with me, some of the administrators, that I'm basically getting an MBA on the job." For Patty, experiences and "getting older" help the individual develop a much needed "confidence" in their abilities. Jane believes in the power of experiences as a learning method, saying that "everything you do in life, everything, has a teachable moment in it." She also believes that people learn best when things don't go as planned. Her advice to women seeking leadership is that "you need to also not be afraid to stumble and fall on occasions, because it is true that those are the times you often do learn the most, as opposed to if everything is just handed to you." Daisy also describes learning from experiences about managing her team by "just seeing what worked and what didn't work." Ursula learns and adjusts her performance every year, by evaluating the approach: "I also have a better sense this year of how this past year went." This in turn will help her set "clearly the expectations" for her trainees and identify "the targets we want to meet." Sarah describes a similar perspective, saying "when you have a significant failure, which I'm sure I had some along the way, it's very disheartening and disconcerting, because you figured you put your all into whatever it was, and it wasn't good enough."

Reflection. Fourteen participants (52%) described using reflection as a way of learning, usually associated with their experiences. Twelve of those participants are in positions of leadership, either academic (7) or hospital-based (5). Participants engage in self-reflection when prompted by external agents, or by a personal drive to improve or better perform in their roles.

For example, as a leader, Walda focuses on providing her colleagues with feedback about interpersonal issues, in order to help them in their performance. The need to provide meaningful feedback forces Walda to engage in self-reflection, leading her to learn a lot about herself in the process. Similarly, Yolanda oversees the work of a group of physicians engaged in research. She describes reflecting and thinking "through what my feelings and activities were when I was actually doing [similar] research, so that I have a better sense of how somebody might react to the requirements" being placed on them. Claire says she would be ready for her next leadership position, because after a few years of experience, she knows "the players," and she does "know [herself] a little bit better now." Ursula likewise describes that she's "always self-evaluating, and again being fairly critical of" herself, as she starts to "brainstorm" her career plans for the "next year." Jane is allowing herself to take the time to engage in reflection, a break from the relentless pace of medical school and training. Despite being interested in maintaining a position of leadership, she describes the process as follows:

> I think that for me, throughout my whole life, and especially being on a premed pathway, I've always been in the mindset of what's next, what's next, what's next, and I'm trying really hard…although not very always successfully…to be more present in the moment, and reflecting, and realizing I don't necessarily have to have a goal of where I want to be in a year.[…] I want to give myself some time to just be present and see what feels right.

Interactions with external agents can also lead participants to reflect. Participants described interactions with life partners, with educators, with leaders, and with patients. Daisy engages in reflection when prompted by her husband to weigh the importance of a work commitment. Similarly, Gladys describes the help of her husband who she describes as having "a good sense of dealing" with relational challenges, and who "helps [her] work it through." Similarly, family events may prompt reflection. Kate's loss of a parent forced her to engage in "introspection" about managing relations. She describes this as "that was the main thing that changed me." After participating in a leadership

workshop, Audrey felt that the main learning point was a session with a facilitator "that made me go home and really think a little bit." Audrey's reflection was also triggered by an interaction with her leader, making her realize her value to the team. She describes that interaction as "it was a real revelation. That moment was a real change for me in terms of just being a little bit more directed about what I wanted and realizing that that was okay." Tania's experiences prompt her to question her assumptions about the attitudes and behavior of a leader, which in turn helps her modulate those behaviors. She says: "I used to think that my energy and momentum and voice was a good skill to have for a leader, but again, I saw that kind of fail for me in one of my first attempts, so it's something I'm working on taming a little." Mary was prompted to reflect on her priorities, and on prioritizing her time commitment between work and family. She describes witnessing young patients dying, and thinking "I hope I get more time for me and my family."

Incidental. Ten participants (37%), most of whom (8) hold positions of leadership, described incidental learning activities. Asked how she learns to manage her job responsibilities, Walda says "I'm learning on the go." Likewise, Ursula answers "in some ways I think just from trial and error quite honestly." Mary describes learning from situations faced at work and learning from mistakes that involved inefficient scheduling; she says "we've gotten slowly better, and it's taking being burned."

When unexpected situations happen, several women describe seeking the advice of their professional network. Yolanda describes learning to "manage various situations that have come up" by seeking out colleagues for their advice. Similarly, Daisy reaches out to "senior people [she's] worked with" for advice on their opinion in solving problems that she faces.

The unintentional nature of the incidental learning is described by some participants. Diane describes her career path as "I never had my heart set on anything and just kind of took a path" and followed the next steps. When asked about her learning and

career path, Nancy said "I'm a little bit surprised about where I'm at right now. […] this is not what I was intending to do. My intention was always to be a good doctor and to treat people in the community." Instead, she has taken the opportunities that presented themselves and she engaged on a path to become a researcher. She describes her path as "it seems like it was little bit of timing and luck." Mary on the other hand, had what she describes as clear plans for her career. However, she remained flexible in her choices, allowing herself to deviate from the path, saying "I kind of fell into it." Conversely, when discussing her career plans, Jane seeks to identify her goals because she says "I don't want to feel like I'm aimlessly going down a path." She wants to allow herself the time to reflect in what she wants, however she says "I think sometimes you have these unexpected defining moments in your life, where suddenly it becomes really clear."

Incidental events at work may also impose an emotional burden on those involved, which may hinder their learning. Audrey describes the emotional response that was triggered by an unplanned, and unanticipated request from her leader to take on managing a new work unit. She describes her state of mind as follows:

> I still distinctly remember my state of mind that night. It was really, the timing was so bad and after I said 'yes' I was so upset. I was just so upset. So, I knew I had mishandled it because I myself was just really, really upset at myself for just kind of saying yes to something without thinking about it more or even understanding what it was.

Similarly, Tania's career path toward leadership was shaped by self-reflection which was triggered by an unanticipated emotionally charged confrontation with a colleague. She recalls:

> After I had my kids, I had a very low moment at work, where I had a confrontation with somebody, and it was just so emotionally impacting that I had left my children, driven an hour to work to get screamed at and have an argument. I kind of was thinking, 'What am I doing?' I decided on, or about then, that I'm either going to leave my children every day, drive to work, and work crazy hours to make things and myself better and have a better product for it, or I'm going to go do something else.

Non-formal learning. Nineteen participants (67%) described engaging in non-formal activities of learning. Most of those have leadership positions, whether academic or hospital-based. The non-formal activities are grouped as: mentoring, workshops and meetings, and communities of practice.

Mentoring. Throughout the interviews, mentors were often acknowledged as a driving force for career development. Fourteen (52%) of participants described the learning imparted by mentors. Eleven of those participants held a position of leadership, either academic (7) or hospital-based (4).

For Kate, the "personality" of the mentor is key to allow establishing a sustainable learning relationship. In absence of established mentoring relationships, Gladys describes setting up and participating in a peer mentoring group consisting of other colleagues within the medical center, who have similar interests in leadership issues. Emily believes all women physicians "need a man and a woman mentors," She defines the role of the mentor as having knowledge of the person's "weaknesses," "strengths," as well as the surrounding "issues," and then provide support to "help you along the way." Tania similarly believes a mentor was able to help her by taking on "not a coaching role, but something similar." Beatrix acknowledges the role of her mentor in helping reframe her career milestones, describing that influence as follows: "she sort of restructured what I thought was success and said, 'You are successful.' She helped a lot."

Mentors also provide valuable feedback to guide the learning. Walda describes relying on feedback and mentoring on her learning path as she develops communication skills that promote her message at work. Claire got "sat down" by her boss for debriefing after her outbursts in her work unit, which has contributed to her feeling she has "matured significantly" over the years.

Workshops and meetings. Twelve participants (44%) relayed participation in workshops. This was mostly reported by women in positions of academic leadership (10 or 71%). For Daisy, participating in a workshop sponsored by the university allowed her

to explore her leadership style, have an "overall picture" of the organization, and "meeting other people" with different affiliations across the organization. Tania describes what she learned about herself and about others after participating in two different programs geared toward developing leadership skills:

> I've learned a lot about myself and how I approach things. Before I even ever went to either of these two programs, I just assumed that everyone in medicine was Type A, you know? But it turns out there's different ways to qualify Type A, we all can kind of get to the same place with different styles. I don't think I recognized as much of what the different styles were and what they meant.

Zoe thinks the benefits of participating in a leadership workshop for her have been "learning how to be a better leader, understand the structure of the hospital." She also believes having completed a leadership workshop provides her with credibility for the "next more significant leadership role." Hannah similarly believes that she'd like to participate in a leadership program "because it opens a door to a leadership position […] or it prepares me to […] have a more leadership role in the hospital."

However, similar to formal courses, the timing of workshops is important for the transferability and the usability of the learning. Despite the perceived benefits and learning during a workshop for leadership development, Daisy describes it as "it was too soon. I think you have to do those [workshops] later on when you have some perspective." Beatrix agrees that the leadership workshop in which she participated was "a nice course." She also identifies the importance of timing of those courses. She says: "I think when people get near to those leadership positions, they take those training, it's pertinent to what they want to do. They're paying attention, that's fine." Audrey feels it "would be huge" if more leadership training opportunities were available for faculty earlier in their careers. She says "it's crazy" that she's finally getting to participate in a leadership workshop, "ten years into [being on] faculty."

Applicability of the learning was also discussed. Emily describes learning about negotiation skills in a non-formal workshop geared toward leadership development, and

later applying those skills in pursuit of a promotion and a raise. However, Claire declined to participate in a formal degree because she felt she didn't have the time to dedicate to the program, and because "it wasn't necessarily needed for what I wanted to do." Instead, she hired "an analyst" who has helped her "come up with the spreadsheets and the data." Likewise, Eva doesn't believe a leader in medicine needs their "own marketing degree," for example, because in her opinion, "there are people who do that. I think it's important to listen to the people who do do the marketing because that is their area of expertise." Despite the good learning experience with leadership workshops, Tania is not trying to participate in other programs. She says she's "looking for a good program, it's just low on my list of priorities." Beatrix is cautious in endorsing the benefits of workshops and courses for leadership development. When asked what she learned from the courses she participated in, she says "not much." Throughout her career, she says "I sat in so many courses, I want to shoot myself. I sat in all the courses that I could possibly sit in." First, she thinks "all those courses are just a waste of time." In addition, her frustration stems from her perception that when leadership workshops were offered to women, they were in fact a process of "checking boxes." Participants who enrolled in those workshops felt "all excited," thinking "Oh wow! They're grooming us or something," and hoping this means "this is a pool of leaders that we can develop." However, Beatrix says "we sit in the courses and we don't get any positions."

Several of the participants had attended the leadership workshops organized by the American Association of Medical Colleges, and geared toward women faculty in early or mid-career. Participants described this program as helpful for their careers, because it provided them with training in various leadership skills, and because it allowed for networking and mentoring opportunities. It also provided women with the opportunity to engage in communities of practice. Gladys advises women to apply to the AAMC program and "recommend[s] it highly." Beatrix, who is overall wary of leadership courses, singles out the AAMC course as a "nice course," saying that "one did help me."

Xena's participation in such a women's only workshop provided her with the space to engage in reflection and the feedback from colleagues to evaluate her current situation. This experience was "empowering" and in turn allowed her to realize "I need to make a change." She describes her experience as follows:

> I was so skeptical going away for however many days it was, and hanging out with a bunch of women. I have to admit, I was like, 'This just does not sound like something that I want to do.' And it was life changing, I have to say, because at the end of that time I made a list of what I was going to come back and do, and in terms of who I was going to talk to, what sponsors I was going to find, how I was going to approach things, and it really gave me the courage to just go for things.

However, despite the perceived benefits of participating in workshops, Audrey thinks that the workshops had "been very intense and there's no way you could do that for every person" who had an interest in leadership.

Communities of practice. Ten participants (37%), in particular those with academic leadership (7), describe either the need for communities of practice, or belonging to a community of practice. Rachel describes learning to develop her area of interest by interacting with other practitioners, forming an online community of those with similar interests. She describes this as follows:

> In addition to meeting with people who have similar interests on campus here, I was then having conversations with faculty members at other universities around the country that have a [similar interest] or [similar program], and asking them, 'what does that mean and what are you going to do, and how did you develop it?'

Jane describes the "tremendous resource" of belonging to such a community of practice. She says that after participating in a leadership workshop, "a group of women […] got together, […] helped support each other, did some almost book clubs […], and tried to really make it almost like a self-study of how to improve." Participating in this group allowed her and members to "bounce ideas off other people and recognize strengths of your ideas you may not have fully realized, or also weaknesses, or potential challenges and ways to overcome them." Gladys also thinks that "meeting other people"

who share similar interests and career focus "has been enormously helpful." Ursula describes participating in a "really great group," consisting of people interested in medical education, to discuss individual projects, as well as methodologies in medical education research. Beatrix credits her participation in a workshop with providing the opportunity to advance on her career path. She describes it as follows "I sat with very capable women, because it was a great group and talked about women's issues in leadership. That was great for me. That was where I got true advice on how to get my career path."

Formal learning. Six participants (22%), most of whom are in academic leadership (4 participants), described engaging in formal learning activities. Xena describes getting leadership and management insights from books, however she says "not that you can learn everything from books." She completed a formal degree program, partly because she was "looking towards improving my research," and learning about "different ways of approaching a question." Francis describes participating in a formal program as providing her the resources and the networking ability to connect with leaders. Having this conversation with leaders allowed her to discover "how they got there, what they learned along the way, […] so you see what is possible." Rachel describes a formal training program geared toward leadership that uses a combination of "coursework" and "a real-time, administrative-related project" relevant to her position. She also describes the benefit of such a program as building networks and providing her visibility. Emily enrolled in a formal degree program related to her leadership position. She describes the benefits as follows:

> It actually helped me understand the people around me and that was very important, because I know what I want but I need to understand the people around me. This is one and, second, help me learn how to motivate the people around me to do what I need them to do.

Asked about the value of adding leadership courses to the medical school curriculum, Walda replies "the answer is a resounding yes!" because she believes it

would be "very helpful." Likewise, Ursula thinks that medical students "spend a ton of time in art and science with medicine," while "there's very few classes related to business management and leadership is tied into that." She suggests that introducing experiences into the medical school curriculum about "leading a team or leading a group or having some sort of role modeling […] might help develop those skills." Beatrix disagrees because she feels the early timing makes the content unlikely to be transferrable. She says that if "you give me a leadership course in med school, that's useless. Totally useless."

Residency or training is another time to engage physicians in aspects of leadership, and to promote self-reflection on related topics. Ursula says that after medical school, and during residency training, "there's not all that much time to have that introspection" about team leadership, such as "how was I a good leader of my team today? How did I manage my residency team?" She accordingly suggests that "if there was a leadership development class as it relates to even clinical work, I think that would have been really helpful" during residency. Claire believes early exposure to leadership courses during medical school would "probably" be helpful, but "it depends on the individual." She believes the time during residency would be more appropriate for introducing leadership training. Claire describes a training program in a different medical center that introduces its trainees to leadership skills through a formal curriculum. She thinks that program successfully graduates future leaders, "people who ultimately become heads of their departments."

Social Learning Context

The context in which the learning path unfolds was found to have three main contributors: the self, family and partners, and colleagues. Colleagues were further grouped as peers, leaders, trainees, and medical societies.

Self. Thirteen participants (48%) attributed their learning to their reflection and to an individual quest. Kate feels that because of lack of mentorship in her work

environment, she has to rely on herself to "come up with ideas" on how to advance her career. When Rachel found that her role didn't have specific definitions, she was advised to set her own description and "goals" for the role. Accordingly, she says "I can decide whatever I want to do and then fulfill it. So, I have set a couple of goals for myself," that she has based on her perception of "what would benefit" the team.

Partners and family. Eleven participants (41%) described learning from and with their partners. Gladys perceives her husband to be "somebody who's got a good sense of dealing with people." He in turn helps her "work through" her work-related "complaints." Daisy's husband asks her the questions that help her reflect on situations, appraising their importance and how engaged she should be. Similarly, Walda describes how her husband helps her engage in reflection, and that "kind of conversation is constant." Emily's husband, familiar with leadership roles, helped her draft a business proposal for her initiative and guided her through the process.

Several women mentioned the parental and specifically maternal influence on their world views. This influences how they approach challenges, and how they assign priorities to different aspects of their lives. The parents of Gladys always recommended engagement to help others, prompting her to avoid being on the sidelines. In addition, Rachel describes learning time-management skills through advice from her mother.

Yolanda believes that "watching," how her parents who were both physicians, "dealt with a number of situations in their life was an early piece for me, that is, that still resonates." For Jane and Hannah, memories of their respective mothers' presence at home influence how they approach work-life balance.

Colleagues. Twenty-four participants (89%) described learning from their colleagues in various situations. Based on the interviews, colleagues were categorized as: peers in the workplace, leaders, trainees, and members of medical societies.

Peers. Seventeen participants (63%) described learning from interactions with their peers within the study center and from other institutions. Participants with no

positions of leadership were most likely to describe learning from their peers (6 or 86%). Mary feels that the work environment fosters learning when she's working and "talking" with "more experienced" colleagues in her unit. In addition, having open conversations among colleagues allows her to anticipate changes in the work unit that affect her schedule. Similarly, Olivia enjoys being part of the leadership group, which in addition to giving her influence, allows her to interact with colleagues who make it easier to understand "the political forces." Xena's colleague from a different institution shares his learning and recommendations about "what management books to read." Other colleagues foster learning by sharing their own experiences, or copies of their portfolios to help Xena build hers. When deciding on a career move, Zoe relied on the advice and guidance of colleagues. Interacting with others from various backgrounds, prompted Patty to "really […] appreciate other people's perspectives."

Most importantly, seeing other women succeed in this role prompts some women to believe they, too, can do it. Walda says "I don't think I ever would have chosen [her specialty] as a career if I didn't have […] other attendings […] who showed me they could be awesome as moms and be a [specialty] physician." She recalls that when she was in training, she witnessed how a woman physician "would go to daycare" to "give [her] kid Tylenol drops," then return to the service to continue caring for patients. Walda says "it's that kind of role modeling that" led her to believe that "I can do this and I can relate to that."

Leaders. Eleven participants (41%) describe learning from the contact with leaders in the institution. Seven of those participants hold positions of leadership. Interacting with leaders allows Francis to learn "how they got there and what they learned along the way." This demystifies the process and allows her to see "what is possible" for a career in academic medicine. Audrey attributes her political savviness to working close to leaders, allowing her to "sit in some of these higher level meetings so I do know a little bit of the strategy of what's going on." Observing the behaviors of leaders has allowed

Xena and Yolanda to modulate their behaviors accordingly. When leaders act as supportive mentors, they can also help women modulate their outlook. Beatrix describes how a leader helped her reframe her career path, allowing her to see how she had been "successful" in her pursuits.

Trainees. Three participants described the interactions with trainees and their effect on the learning. Rachel serves an educator of junior trainees, and she in turn learns from being in that position. She says "selfishly, whenever I teach I learn more." Claire also describes the interactions with her trainees who challenge her and help her maintain her medical and technical knowledge. Trainees are often the source of learning for participants whose learning path goal is to improve the training program. Ursula invited her trainee to "sit down and talk about" how to "improve" some aspects of the training program.

Medical society members. Nine participants (33%) described the learning that was facilitated by colleagues who are members of medical societies. Six of those participants hold positions of academic leadership. Participating in specialty meetings allows participants to interact with others and to compare experiences related to their positions. Vera realized the issues with "leadership in [her work unit] was not so great," after "sitting at a round table" with others in the field, and discussing the challenges they faced: "we were all like yeah, we don't have mentors or leaders, so I also realized I wasn't alone." Sarah was advised by members of the medical society to build her academic "portfolio," and "credentials." As previously described, Irene's colleagues in medical societies helped provide career opportunities. Emily works within the society for her specialty to build scientific and educational programs for women.

Learning Facilities

Facilitators of learning were often provided by the workplace, either explicitly as support for meeting and workshop participation, financial and time support for

enrollment in formal programs, or through the continued support of colleagues and workplace. Thirteen participants (48%) described the facilitators provided by the workplace, and eleven of those participants hold either academic or hospital leadership positions.

Support provided by her department helped Rachel develop a website for her program. Participants described the support provided by the center in pursuing leadership workshops within the institution and nationwide. Likewise, several participants enrolled in formal programs supported by the work center. Emily negotiated the tuition of a degree program part of her compensation package, while "promising" her leader that it wouldn't affect her productivity. Likewise, the women who participated in AAMC workshops were at least supported in part by funds from the study center, and by endorsement of their work unit leaders.

Claire describes the work environment in academic medicine as "very intellectually stimulating." A work colleague and mentor helped connect Rachel to a network of physicians with similar interests, allowing her to participate in a community of practice that in turn helped her build her program.

Summary of Findings Chapter

This chapter presented the findings of this single center qualitative research. Findings were presented in relation to the research questions, and were discussed using the conceptual framework that informed the data collection and analysis. The perceptions of the twenty-seven participants in this study were explored and shared.

The first finding related to women's perceptions of observed or ideal characteristics of effective leaders in academic medicine. Participants' responses were grouped according to the focus of leadership. Effective leaders were perceived to be those who are effective managers of people, and of self. All participants described the

importance of soft skills for the effectiveness of leaders, including interpersonal and communications skills. By contrast, less than half of the participants described effective leaders in relation to their management of tasks. Participants discussed the importance for a leader to demonstrate caring for the people, to know their needs, to exercise listening and clear communications, and to help support their faculty. Personal self-awareness and control were considered relevant by several participants. In addition, several personality attributes contributed to the effectiveness of a leader such as being approachable, being open to others' ideas, confident in their abilities, and humble.

The second finding relates to the perceived facilitators and challenges on a career path in academic medicine. The elements were explored in terms of environmental, structural, situational, and motivational factors. The environmental factors relate to the workplace environment and were discussed as: culture of the workplace, interpersonal relationships, gender issues, and gatekeeping. Overall, the environment of the workplace was found to be a challenge on a career path. In particular, women, regardless of presence or absence of leadership, described difficulty integrating the culture and implementing change, and reported challenging interpersonal relationships. In addition, a large number of participants reported gender-based challenges such as absence of female role models, and gender bias. In particular, women in academic leadership positions were more likely to describe challenges related to gender issues. Gender bias in the workplace was experienced by 79% of women in academic leadership positions. By contrast, presence of gatekeeping was more likely to be discussed by those without leadership positions.

Structural factors relate to the resources available in the workplace. These were categorized as resources that helped get the work done, and resources for portfolio development. Most women described as challenges the time commitments, work schedules, and lack of administrative and personnel support. Overall, the importance of mentoring was recognized. Presence of mentoring was identified as a facilitator on a career path, in particular by women in positions of hospital leadership. Conversely, more

women in academic leadership perceived lack of mentoring as a challenge. Serving on committees was perceived as a career facilitator by those who have attained academic leadership. Women who are in leadership positions were more likely to perceive a lack of transparency in the processes of the study center.

Situational factors relate to the home life. A majority of women described the challenges of dependent care and its implications on their well-being. Women, overall, described their partners as supportive of their career choices.

Motivational factors were explored; women in academic leadership exhibited desires and interests in advanced leadership positions, while women who are not in leadership reported not having an interest in leadership positions. Women overall described having self-efficacy in their leadership capabilities, especially women who are in academic leadership positions. Overall, women perceived that their negotiating abilities were a challenge on their career paths.

The third finding explored the rewards and sacrifices women perceive on a career path toward leadership. Overall, most women physicians, regardless of presence or absence of leadership positions, described patient care and their clinical responsibilities as the most rewarding aspect of their careers. The sacrifices described by women on their career paths related to their own personal wellness, and to lack of available time for family or for personal care.

The fourth finding was related to the learning paths of the participants. This was explored along four categories: learning themes, learning activities, learning context, and facilitators. Overall, more participants described engaging in learning geared toward acquiring knowledge and skills for management of tasks than in learning to manage people or self. Women in hospital leadership were more likely to describe themes related to management of people. The described learning activities were most often informal ways of learning, such as self-directed, learning from experiences, engaging in reflection, and from incidental forms of learning. Formal ways of learning were least described by

women, regardless of positions of leadership. Women in academic medicine are most likely to learn from colleagues within or outside the institution, including peers and leaders.

The summary of each finding as described answered the corresponding research question, and provided a basis for the analytical categories that are explored in the next chapter. The perceptions of women toward leadership, their perceptions of facilitators, challenges, rewards, and sacrifices, as well as the learning paths toward leadership were the central questions of this research. Four analytical categories emerged from these findings: a) eligibility to lead, b) motivation to lead, c) possibility to lead, d) learning to lead.

Chapter V

ANALYSIS, INTERPRETATION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this qualitative case study was to explore participants' perceptions of the characteristics of effective leadership practice, how they view their own leadership potential, what motivates them to (or not to) seek leadership positions, what facilitators and challenges they face or may have faced in seeking such positions, what rewards and sacrifices they experienced or may have experienced on their career path, and how and what they learned in the process. The findings that emerged from the 27 in-depth interviews are further analyzed in this chapter along four categories.

Leadership in academic medicine is explored based on women's perceptions, and on the relevant literature. This explores leadership in academic medicine along four analytical categories. The first analytical category discusses perceptions of *eligibility to lead* in academic medicine, which consists of: research productivity, tension between titles and roles, and absence of role models. The second analytical category discusses the *motivation to lead* for women in academic medicine and is explored in three areas: personal characteristics, leadership self-efficacy, and effect of gender issues. Gender issues are discussed in relation to the workplace, to home, and to perception of self. The third analytical category discusses the *possibility to lead*, which explores ways in which women's career paths are affected. This includes: mentoring relationships, gatekeeping, promotions, and sacrifices of leadership. The fourth analytical category discusses

learning to lead, using the previously described model which consists of: learning themes, learning activities, and social learning context.

The participants in this qualitative research are all full-time women who are faculty in a single large urban center. The participants were recruited based on their specialty and their year in practice. The findings were explored according to the presence or absence of institutionally-defined leadership positions. Three groups of participants were identified: those in positions of academic leadership (14), those in positions of hospital leadership (6), those with no leadership positions (7). The analysis of findings considers the participants' leadership positions.

In this chapter, the researcher presents the analysis of findings based on the described analytical categories, along with a synthesis and interpretation of findings that relate the analysis to the existing body of literature on leadership, women in medicine, and adult learning. This is followed by revisiting of assumptions, conclusions and recommendations.

Analysis

The identified analytical categories are discussed and explored, emphasizing the different perspectives of the three groups of participants as applicable. Participants' demographic data and details of the used pseudonyms are presented in Tables 2 (p. 67) and 3 (p. 82) respectively. The following section explores the emerging career paths toward leadership along three main categories: eligibility, possibility, and motivation to leadership.

Analytical Category 1: Eligibility to Lead

Participants in this study recognized that the current norms for eligibility for a leadership position are based on past experiences of leadership and on recognition of

being experts in the field. These are in turn contingent on non-leadership related attributes, namely academic productivity. This is similar to other reports describing the attributes of leaders in academic medicine as "the gifted surgeon who pioneers a new procedure; the brilliant researcher who advances our understanding of a disease…" (Souba, 2004, p. 177). Perceived leadership eligibility in academic medicine is gleaned from the interviews and three themes are discussed: the relevance of research productivity, the inconsistency between roles and titles, and the absence of role-models.

Research productivity. Detsky (2011) reflects that although the challenges in the academic medicine environment have become more complex, leaders are "chosen and trained for these positions no differently than they were before," and are often chosen because of their research productivity (p. 90). Establishing research productivity was perceived by the participants in this study as an important prerequisite for achieving a leadership position in academic medicine. Twenty women (74%) who participated in this study perceived that leaders in academic medicine are chosen based on their research productivity, external funding portfolio, publications, and external recognition. These impressions were shared by women, regardless of presence or absence of leadership positions. Accordingly, a "rigorous academic research background" (Ursula) may be needed to be considered for an advanced leadership position.

In a recent report exploring leadership positions in academic otolaryngology, the authors found that chairs of academic program had significantly more years of experience in their specialty, had the highest "scholarly impact" of their publications, and the greatest "external funding" compared to vice-chairs or programs directors (Eloy et al., 2015, p. 623). The "inaugural" cohort enrolled in the Emerging Leaders program sponsored by the American Thoracic Society was described as a "slate of talented nominees who were distinguished by their emerging success" (Stoller, 2017, p. 1623). In that study, 94 % of participants accepted in the program had extramural grant funding, emphasizing the perceived importance of research productivity on the selection of future

leaders in academic medicine. Conversely, women in this study were more likely to be involved in "good citizenship" work (Irene) such as responding to non-billable consults (Ursula, Zoe). These service-related tasks are not quantifiable and do not show up "as a line on the [academic] CV" (Irene). Babcock, Recalde, Vesterlund, and Weingart (2017) note that "research-related tasks may be considered more promotable than service-related tasks" in academia (p. 715).

Role vs title. The problem is further compounded by the discordance between title and role. Seven participants, all of whom are in positions of leadership, shared experiences of serving in positions of leadership within their work units, without the recognition afforded by accompanying titles. Furthermore, women without leadership also commented on similarly observed dynamics within the workplace. Accordingly, it seems that women's contributions to the leadership roles within the institution are not accurately captured by the titles they are given. Similarly, some leadership titles held by men within the institution do not reflect the essential contributions of women who support them in their work. In those descriptions, it seemed that women were doing a large portion of the work, while men were getting the large portion of the recognition. For example, Audrey was explicitly told by her leader that, despite all her contributions as the associate director, she was unlikely to become the program director because as he said "I really want a researcher in charge of the program. I really want to have somebody who's a real researcher." Other participants' shared experiences and observations confirm that women are willing to get the job done regardless of titles or promises of promotions. Kaigler (2016) says, "A title doesn't define a leader. Work ethic and character do" (p. 23). The author recognizes that organizations have limited leadership positions, however the organizations thrive and advance because of the aspiring leaders in their midst. Aspiring leaders are able to motivate and influence others, and they are able to "establish relationships and close communication gaps" (p. 24). However, despite women's engagement and their commitment to their work, it appears that leaders and

organizations continue to favor the "pedigree" of a researcher for the positions of leadership in academic medicine. In turn, the value placed on a research portfolio for eligibility for leadership in academic medicine may lead women to assume they don't have what it takes, thus serving as a deterrent to several women (and men) who would otherwise be interested in leadership positions.

Absence of role models. Women in this study were asked to describe observed characteristics of leaders in academic medicine. A majority of participants described the characteristics and attributes of the men leaders with whom they interacted. Even the participants who have strong women leaders in their work units, referred to the men leaders in their narratives. This may be related to gender stereotypes about leaders, associating the concept of leaders with the male gender. However, it is more likely that this simply reflects the larger number of men leaders compared to women leaders in academic medicine. It also underlies the importance of role modeling for women aspiring to leadership roles. Daisy, for example, says she is more likely to aspire to a decanal position than to a chair position. She believes this is related to the presence of a positive female role model in a decanal role in the study center. Presence of female role models in positions of advanced leadership contributes to fostering women's motivation toward leadership and to modulating the gendered socio-cultural stereotypes of leaders (Elprana, Felfe, Stiehl, & Gatzka, 2015).

Analytical Category 2: Motivation to Lead

Despite the constraints that seem to be imposed by the institutional definition of leadership eligibility, several women faculty have achieved positions of leadership in the study center. The career paths of women in this study who have attained academic leadership are not uniform or linear. However, the women in this study who achieved positions of leadership in academic or hospital leadership describe actively seeking those positions. Audrey recommends that those interested in leadership decide on their personal

goals and seek the support of their leaders accordingly. Olivia similarly advises women to approach their leaders with their interests and for opportunities. These behaviors entail the presence of a desire to be in leadership positions, and a belief in one's own ability to lead. However, a majority of participants (74%), regardless of their own leadership title, perceived a position of leadership as a means not an end, providing them with the ability to influence, to have a voice, and to make a difference. Hargett and colleagues (2017) similarly defined leadership in healthcare as "the ability to effectively and ethically influence others for the benefit of individual patients and populations" (p. 69).

A motivation to lead (MTL) model was previously described in exploration of factors that influence the desire to lead (Chan & Drasgow, 2001). The MTL model provides a theoretical framework for leadership development, and explores the effectiveness of the development process by linking it to its outcomes, such as leadership engagement and satisfaction (Chan & Drasgow, 2001). The authors identify three components of MTL: affective, social-normative, and non-calculative. The affective MTL results from the desire to lead others. Social-normative MTL implies a desire to lead because of a "sense of duty or responsibility" (p. 482). Non-calculative dimension of MTL refers to the willingness to accept the costs or sacrifices of leadership relative to the benefits. In this study, participants with leadership roles described outlooks that are consistent with affective and social-normative MTL. Olivia, for example, indicates that she wants to be "in the room" with decision makers. As mentioned earlier, a majority of participants (74%) described their desire to have influence and to make a positive and sustainable change for those around them. Stoller (2017) comments that for leaders in academic medicine, "the most compelling reason to lead is to contribute to the organization's and colleagues' benefit, even at the expense of personal advancement" (p. 1625). This is consistent with the social-normative aspect of the motivation to lead. In addition, the various outlooks sometimes co-existed, reinforcing the multidimensional aspect of motivation. Gladys is motivated to lead because she says it's better to lead than

to be led (affective), and because of her preexisting values of wanting to help others (social-normative).

It has been suggested that affective-MTL is a strong predictor of leadership emergence, while also being less expressed by women in the workplace (Elprana et al., 2015). Determinants of MTL, as described in the original report, include personality traits, leadership self-efficacy, and socio-cultural factors (Chan & Drasgow, 2001). This model was further expanded by Elprana et al. (2015) "linking social role theory to motivation to lead" model (p. 143). Social role theory links men and women's expected behaviors and the resulting gendered stereotypes to the social roles they occupy (Eagly, Wood, & Diekman, 2000).

In the following sections, categories were extrapolated from those models and applied to this research accordingly: personal characteristics, leadership self-efficacy, and gender-issues.

Personal characteristics. Personal characteristics, including personality traits, can influence the motivation to lead through intrapersonal and interpersonal factors.

All participants, whether with or without leadership positions, discussed the desirable *interpersonal* leadership elements of effective communications, mentoring and role modeling, and respect and caring for others. Effective leaders were described as those who cared about others, were cognizant of the needs of the people in their team, and who worked to promote those around them through mentorship and sponsorship. Allan Detsky (2011), a former chair of the department of medicine in a large academic center, reflects on his 21 years in a leadership position. He comments that "a department is made up of people. How a leader deals with them, their concerns, requests and development is obviously crucial" (p. 89).

Regardless of presence or absence of positions of leadership, a majority of participants (89%) discussed elements of the *intrapersonal* leadership domain such as self-awareness, leading by example, and integrating the culture of the organization. Those

intrapersonal characteristics were slightly more likely to be described by those in academic leadership (93%), compared to those in hospital leadership (83%) and those without leadership positions (86%). This points to the perceived importance of developing personal leadership competencies.

Personality attributes, which are an important aspect of the personal domain of leadership, were also discussed by 70% of the participants, in particular those who do not hold leadership positions. Those attributes included having a vision, being open to others ideas, being accepting of differing viewpoints, and being trustworthy. Hargett and his colleagues (2017) used mixed methodology to develop a leadership conceptual model. Participants in their research were asked to rank desirable competencies in healthcare leaders. "Acting with personal integrity" was selected as most important by groups of ninety-two participants that included medical students, physicians in training, physicians, and non-physician professionals. This competency was defined in that study as "behaving in an open, honest, and trustworthy manner" (p. 73).

In this study, women in medicine offered descriptions of their personal characteristics as current or future leaders. It is not surprising that women who currently hold positions of leadership were more likely to describe their personal styles of leadership. These characteristics included caring for others (Daisy, Ursula, Audrey, Beatrix), striving to build consensus (Eva, Tania, Walda), exercising communication and listening skills (Rachel, Olivia, Mary, Ursula). Those descriptions were congruent with the women's perceptions of what effective leadership in academic medicine should be like. However, those characteristics are at odds with the observed characteristics of leaders. Several participants (Carla, Audrey, Irene, Eva, Diane, Olivia, Zoe, Emily, Hannah) noted that the definition of effective leadership in academic medicine may be tied to the financial productivity of the work unit, rather than people development. Defining effectiveness of leadership depends then on which lens is used for the evaluation: financial growth or people development. This in turns depends on who is

conducting the evaluation of leadership in academic medicine. For women in academic medicine, the dissonance between the personal tendencies and the observed characteristics of leaders may further deter them from seeking leadership roles that are perceived to be at odds with their own views.

Leadership self-efficacy. It has been suggested that a lack of self-efficacy toward leadership may prevent women from seeking leadership positions (Isaac, Kaatz, Lee, & Carnes, 2012; McCormick, 2001). At least two women in academic leadership discussed the concept of "impostor syndrome," a perception of lack of qualification for the title and for the achievements (Clance & Imes, 1978). However, those feelings were not described as overwhelming, didn't prevent the women from engaging in their positions, or in seeking additional roles. Xena recognized the feeling and describes the ability to put a name on it as liberating. Audrey describes that as a result of occasionally having that feeling, she is careful about how she behaves and mindful of how she might be perceived.

In this study, a majority of participants who have leadership positions (86% of AL and 100% of HL) expressed confidence in their abilities to lead, to get the job done, and to find the resources and the support needed for their work. Women who currently hold any position of leadership (90%) were more likely to describe having self-efficacy compared to those without leadership (43%). Women who are not in leadership positions were less likely to discuss issues related to self-efficacy; when they did, they similarly expressed confidence in their abilities. Self-efficacy, as described by Bandura (2010), is "concerned with people's beliefs in their ability to influence events that affect their lives." On one hand, having a perceived self-efficacy toward leadership allows participants to seek and engage in those roles. On the other hand, participation in leadership activities bolsters the participants' self-efficacy through reaffirming experiences.

Having experiences in positions of leadership was seen as a facilitator to future, more advanced leadership roles. That was described by one participant (Patty) as "climbing the career ladder." The importance of incremental experiential exposure is

recognized as an important component of successful leadership development programs (Stoller, 2017). Stoller argues that "success in early leadership roles begets further leadership opportunities of progressively larger scope" (p. 1625).

For example, Audrey described "clawing" her way on her career path to leadership. Gladys and Emily's requests for a leadership title were rejected more than once, despite their continued active engagement in their respective work areas. In addition, building credibility through experiences was described by participants, regardless of their leadership status, as an important step for establishing self on a path toward leadership (Kate, Hannah). For some participants this meant opportunities to learn on the job (Kate), having a "foot in the door" (Audrey) or a "seat at the table" (Olivia). Serving on committees was described by 64% of participants in academic leadership as helping build their academic portfolio toward career advancement. In contrast, only 43% of those without leadership discussed the facilitating effect of committee work.

Several participants cautioned that not all committee work helps advance a career, however they recognize that it might lead along a desirable path or offer opportunities for networking and interpersonal connections. Isaac and colleagues describe committee work in academics as "institutional housekeeping activities," that seldom lead to promotions or to career advancement (Isaac et al., 2012, p. 307).

Gender issues. Gender-related issues impose a modulating effect on women's engagement in leadership. Gender related issues were discussed by participants in this study in three contexts: workplace, home, and personal choices.

Gender issues at work. A majority of participants (70%) described experiencing or witnessing gender-based issued in the workplace. Interestingly, women in academic leadership were more likely to experience gender bias (79%), compared to those in hospital leadership (67%) or those without leadership positions (57%). One explanation could be that having leadership positions exposes women to these interactions. The gender bias often manifests as uncivil behavior where, for example, women are addressed

by their first names rather than their titles. Files and colleagues described similar occurrences in a retrospective observational review of 321 video recording of professional introductions in a department of medicine, in two medical centers (Files et al., 2017). When women introduced the speakers, they used professional formal titles more than 95% of the time, regardless of the gender of the speaker they were introducing. By contrast, when men were doing the introductions, they were overall less likely to use formal titles when introducing other speakers. Men used formal titles 72% of the time when introducing men speakers, and only 49% of the time when introducing women speakers (Files et al., 2017). The authors concluded that these behaviors further perpetuate "isolation, marginalization, and professional discomfiture" of women in academic medicine (p. 418).

Some participants (Kate, Audrey, Claire, Xena, Walda, Tania, Vera, Emily), all of whom hold positions of leadership, described situations where their presence, or their voices were ignored by colleagues or by other healthcare workers. Pololi, Civian, Brennan, Dottolo, and Krupat (2013) similarly observed through a series of interviews with faculty in academic medicine that women report "feeling marginalized and invisible." (p. 202). The authors surveyed 4,578 men and women faculty from across 26 US medical schools; among respondents, women were more likely than men to have negative perceptions of concepts related to "feelings of trust, inclusion, and connection" (p. 203). In this present study, holding a position of leadership exposes participants to interactions with others in the healthcare field, increasing the likelihood of experiencing gender bias. In addition, interactions with leaders and positions of leadership may sensitize women to the gender issues.

Several women (36%) who held positions of academic leadership described their perceptions of being held to different standards in their communications than their men colleagues. They felt they needed to meet gender norm expectations in order to be heard. In addition, participants described a lack of support from their leaders in addressing these

issues, which often go unnoticed or are dismissed. Similarly, Bickel et al. (2002) described the results of their interviews of women in medicine serving as department chairs. The authors reported that "women chairs face challenges that men do not, particularly a lack of recognition, inappropriate attention paid to them, resistance reporting to them, and constraints on their leadership and decision-making styles" (p. 1047).

Gender issues at home. A majority of participants describe supportive partnerships at home, actively sharing the dependent care obligations. Women who are in academic leadership (64%) were more likely to describe partners who are supportive of their career paths, and who provide them with valuable career advice, compared to 33% of those in hospital leadership and 29% of those without leadership positions. Participants in this study expected and described an equitable sharing with their partners of the dependent care responsibilities. Several participants however described being the primary care giver. Yolanda, for example, describes these as the "classic roles" for men and women and Mary acknowledges that "in every relationship, someone is the primary caretaker." Like several of the women interviewed in this study, she feels she is "the bottom line for [her] kids." Women will be the first to sacrifice work or career plans in order to respond to family demands. Others have found similar arrangements in a survey of high-achieving business school graduates (Ely, Stone, & Ammerman, 2014). They found that men in heterosexual partnerships overall expected to be in "traditional" arrangement, with their career taking precedence over their partner's. Women by contrast, expected equal involvement in childcare of both parents, however they ended up shouldering a larger proportion of the dependent care (Ely et al., 2014). Anne-Marie Slaughter (2012) wrote an opinion article "why women still can't have it all," drawing on her personal experiences as a mother, an accomplished tenured academician, with several positions of leadership in academic, and positions of influence in a high-ranking political job. She says, "I do not believe fathers love their children any less than mothers do, but

men do seem more likely to choose their job at a cost to their family, while women seem more likely to choose their family at a cost to their job."

All participants with dependent care described investing in reliable and extensive child care support system. However, those systems are not usually successful at alleviating the cognitive and emotional burden of childcare. The physical and time demands of dependent care as well as the emotional burden it imposes were equally likely to be expressed by a majority of women (close to 70%), whether they held leadership positions or not. Dependent care responsibilities extend the work days for participants by several hours, in the morning and in the evening. A survey explored the gender differences in time spent on parenting and on domestic chores of 1708 early career physician-scientists who were recipients of recent national funding (Jolly et al., 2014). Significantly more women than men reported a full-time working partner (85.6% vs 44.9%), and men were four-times more likely to report a part-time or non-working partner. After adjustment for working schedules, the self-reporting survey revealed that women spent 8.5 more hours per week on domestic activities, which the researchers defined as activities related to home maintenance, and not related to child care (Jolly et al., 2014).

The need to be present for their dependent and for their family constitutes an emotional burden for participants. Moreover, the resulting sleep deprivation affects the personal wellness of the participants who experience it. This was mostly discussed by those without any leadership roles (71%), compared to those in academic leadership (64%) and those in hospital leadership (33%). Based on their own observations and discussions with partners, participants perceived that their engagement with dependent care was different from their partners'. Most participants, regardless of their leadership status, described themselves as being more prone to experiencing guilt, and to feeling a larger cognitive load. A notable difference among participants was the emotional response to dependent care responsibilities, experienced by women at different stages of

their career. In this study, eight participants were in early career, thirteen in mid-career, and six in advanced career stages. Most of the participants who are in mid- or advanced career have children (92% and 83% respectively) compared to those in early career years (37.5%). Parental status of the participants is described in relation to their career stage and their position of leadership in Table 12.

Table 12. Parental Status by Career Stage and Positions of Leadership

	Number of overall participants N=27 (%)		*Number of participants with Academic Leadership n_1=14 (%)*		*Number of participants with Hospital Leadership n_2=6 (%)*		*Number of participants with no leadership position n_3=7 (%)*	
Parental status	*Children*	*No Children*	*Children*	*No Children*	*Children*	*No Children*	*Children*	*No Children*
Early career	3 (11%)	5 (19%)	-	2 (14%)	1 (17%)	1 (17%)	2 (29%)	2 (29%)
Mid-career	12 (44%)	1 (4%)	8 (57%)	1 (7%)	2 (33%)	-	2 (29%)	-
Advanced	5 (19%)	1 (4%)	2 (14%)	1 (7%)	2 (33%)	-	1 (14%)	-
Total	20 (74%)	7 (26%)	10 (71%)	4 (29%)	5 (83%)	1 (17%)	5 (71%)	2 (29%)

The majority (74%) of women who participated in this study have children, regardless of presence or absence of current dependent care responsibilities. Participants did differ in their expression of the emotional burden toward dependent care. Participants in the early career stage were the only group to report *apprehension* of the effect of dependent care on their current or future responsibilities. Half of the women who are in the early years of their career path described emotions consistent with apprehension. Women in their mid- career were most likely to describe feelings of *guilt* toward their roles as care givers, with 54% of those in mid-career sharing similar emotions. By contrast, 67% of those in advanced stages of their careers shared the *acceptance* toward the demands of dependent-care. Those findings are illustrated in Figure 2 (p. 143). The progression of emotions along a career path may reflect the demographic make-up of the

group and the transition to an acceptance phase may occur after children grow and become successfully independent.

Gender and personal choices. Formative childhood experiences shape the outlook of several women, who described the maternal influence on their choices and attitudes. In addition, societal expectations influenced how women viewed their roles. The women's descriptions of their interactions was akin to the distinction made by Simone de Beauvoir in her feminist theory, which draws from Heidegger's phenomenology and the existentialist movement (de Beauvoir, 1968). According to de Beauvoir, women define their essence in relation to others, who are often the men in their lives. For participants in this study, women's definitions of their selves were in relation to their dependents and to their roles as mothers, as defined by society. The difficulty in upholding that role's expectations led to feelings of guilt. Participants in this study described both being-in-self, and being-for-others. Sarah says, "For me, career came first," before her role as a mother and the societal expectations of that role. However, most participants' outlooks were on the perception of being-for-others: being present for their children, being available at school events, and being present as a parent. Being a mother is in itself an example of being for others, of being defined in relation to her role toward her dependents rather than in herself. Slaughter (2012) argues that both men and women are socialized to view women as primary caregivers. She describes a colleague reflecting on her career path, wondering "who needs me more?" whether it was her job or her kids, an illustration of "being-for-others," basing a choice on external demands. This feeling is normalized and deeply entrenched, leaving women with no real choice between career and family. The maternal role is no longer a social construct but a moral imperative, and becomes the essence of a woman's identity. However, organizations and society do not provide the scaffolding to support the various roles men and women are playing. Leadership positions and academic promotions require sacrifices that few are willing to make. Networking, external visibility and name recognition are

required to demonstrate eligibility for promotion and advancement on a career path. Those entail participation in national meetings, speaking engagements, or research funding, all of which impose time commitments taken away from family.

Accordingly, the role definition for the participants in this study was set by a society of others, that delineated the expectations from women in their responsibilities as mothers. Sheryl Sandberg exhorts women to "lean-in," to close the "ambition gap" (Sandberg, 2013, p. 25). Participants in this study demonstrated a desire and interest in leadership positions, a confidence in their abilities to lead, and described gender-specific challenges in the institution that held them back. However, the exploration of a desire in professional advancement is not an all or none, unidimensional view of the topic. It depends on the interplay of the various identities that define the men and women in academic medicine: professionals, physicians, educators, researchers, care givers, mothers, fathers, daughters and sons.

Analytical Category 3: Possibility to Lead

Mentoring. Regardless of their positions of leadership, participants discussed a perceived lack of mentoring support in the study center for those interested or those engaged in research. Absence of mentorship hinders research productivity, and limits participants' ability to secure publications. Conversely, the presence of mentorship and the ability to engage with leaders to discuss career plans was described as a facilitator on a career path toward leadership.

The majority of participants, regardless of positions of leadership, attributed at least part of their success on their career path to the presence of effective mentorship. There is widespread perception of the beneficial effects of mentoring on mentees, on mentors, and on organizations (Geraci & Thigpen, 2017). Some of those benefits include increased retention of faculty members, increased scholarly activities, and overall "career satisfaction" (DeCastro, Griffith, Ubel, Stewart, & Jagsi, 2014; Geraci & Thigpen, 2017).

Participants in this study credited their mentors with providing career advice, with securing opportunities for building the academic portfolio, and for increasing the mentee's visibility in the specialty.

Overall, over half of the women interviewed for this research perceived lack of mentoring as a challenge on their career paths. Women in academic leadership were more likely to describe both the facilitating nature of mentorship (64%) and to report lack of sufficient mentoring opportunities (79%). Others had also reported that "fewer than half of academic physicians identify themselves as having received mentoring during their careers" (Geraci & Thigpen, 2017, p. 151).

The benefits of mentoring relationships were described by participants independent of gender of the mentor. One participant (Irene) specifically observed the lack of *women* mentors for junior faculty, to help in career advancement, and to provide guidance on issues that could be specific to women's professional development. Bickel comments that men can be effective mentor of women faculty if they recognize the myriad of unique challenges women may face on a career path (Bickel, 2014). She also acknowledges that women have more difficulty securing an effective and beneficial mentoring relationship than men.

Several of the participants described mentoring relationships that were initiated during training and that had helped steer their careers in the early years of practice as faculty. Interestingly, mentoring relationships during training are often self-initiated by the mentees. In a survey of senior residents at a single large academic center, it was found that a majority (62%) of mentoring relationships were initiated by the trainees (Amonoo, Barreto, Stern, & Donelan, 2019). In addition, self-initiated mentoring relationships during residency training were perceived as more effective compared to "assigned mentorship" (Amonoo et al., 2019).

In the absence of traditional mentoring relationship, peer mentoring may be an attractive solution to promote women's careers. A majority of participants (89%)

described their peers as facilitators of learning on a career path, through informal and non-formal interactions. The presence of informal peer networks allows participants to build and share knowledge in the organization. Those interactions can be related to the provision of patient care, or can be related to administrative and career management. Participants in a yearlong facilitated group peer mentoring program likewise described the importance of the peer relationships for the success of their experience (Pololi & Evans, 2015). Because of the favorable perception on peer relationships, it has been suggested that peer mentoring groups may be a "feasible and sustainable" mentoring model in academic medicine (Pololi & Evans, 2015, p. 198). However, one of the participants in this study describes the challenge of getting faculty to participate and attend the peer mentoring group she helped establish.

Peer-assisted learning (PAL) has been described as a group of strategies where the learning is facilitated by "status equals" (Topping & Ehly, 2001). The authors include in this broad description the concepts of peer mentoring, peer education, and peer counseling (Topping & Ehly, 2001). A notable advantage of peer facilitated learning is the establishment of a trusting relationship, free from power dynamics, which allows exploration of the affective components of a learning experience (Topping & Ehly, 2001, p. 114). Medical education also uses forms of peer-assisted learning, and physicians are familiar with this approach. Problem-based discussions can be described as a PAL and are commonly used as a form of learning among peers in medicine (Herrmann-Werner et al., 2017).

Gatekeeping and transparency of process. Some participants described a lack of transparency in process overall of promotions and career advancement (Beatrix). Those participants were more likely to be without leadership roles in the institution. This may reflect lack of access to information and the lack in clear communications from those in leadership. In addition, limited resources in support of work growth, and limited work flexibility impose challenges on career paths for women in medicine. These include

unequal hiring packages and resources. Nationally, a gender pay gap persists, despite adjusting for "specialty, academic setting, academic rank and promotion, and percent effort distribution," with women earning on average $16,982 less than men (Freund et al., 2016, p. 5).

Those who are not in leadership positions were also more likely to report presence of gatekeeping, whereby men who are currently in positions of leadership offered resources and opportunities to other men (Irene). Furthermore, integrating the workplace community was a challenge for those joining the organization after training somewhere else. The tightknit environment meant some women perceived themselves as outsiders, without an ability to quickly and seamlessly integrate the workplace. Gatekeeping is described in the sharing of information, or in the shaping of cultural influences (Janssen & Verboord, 2015). Gatekeepers act to limit, filter, or channel the information based on political, financial or personal considerations (Shoemaker & Riccio, 2015). Gatekeeping is not foreign to medicine. It may manifest in the management of patients, preventing or redirecting their access to care or to participation in research (Kars et al., 2016). Similar factors may be at play when those in leadership engage in deliberate or in unconscious gatekeeping of the resources in academic medicine.

Promotions. The value of promotions was not clear to participants, especially those without leadership positions. For most participants, promotions were not discussed as goal in themselves. In fact, only four participants in this study, all of whom are in leadership positions, perceived promotions as a rewarding on their career paths. Specifically, the importance of promotions was related to the opportunities they provided and to the external validation of women's work (Walda). A recent survey of faculty in the department of medicine in a single academic center revealed similar perspectives among women faculty. According to the results of that survey, fewer women than men sought out academic promotions (32% vs 49%). The majority (69%) of women who had not pursued promotions thought that promotions were not beneficial to them; 52% also

reported a lack of encouragement to pursue those promotions (Paulus et al., 2016). In this research, the process of promotions was perceived as not clear by some of the participants (Francis, Carla, Irene, Emily, Daisy, Kate, Walda, Audrey). Similar to the results of other reports, women in this study received little guidance and support in seeking those promotions. Leaders seemed to lack the knowledge and the skills needed to help their faculty engage in and secure promotions, especially on the non-traditional, non-research tracks.

Sacrifices of leadership. Physicians who are in positions of leadership were perceived by the participants as having made or are willing to make sacrifices over several years in order to advance on their career paths (Francis, Olivia). Some of those sacrifices were described as a perceived constant availability of leaders "to put out fires" (Jane). Furthermore, positions of leadership in academic medicine were perceived as imposing an administrative burden on leaders, implying either a limited involvement in patient care or an added stress to their roles. Similar findings across academia have been reported. Dominici and colleagues (2009) conducted focus groups with twenty-seven "senior faculty" with various appointments to explore women's perception of leadership across the university. One of the themes identified by the focus group was that "Leadership positions, as currently defined, are less attractive to women than to men, and possibly are becoming unattractive to an increasing number of men" (p. 26). This was attributed by participants to scarce resources and to the need for leadership role to extend in scope and duration, whereby "leaders must be available 24-7" (p. 26).

Analytical Category 4: Learning to Lead

Participants' professional development and learning were explored using the previously described framework of learning paths (Poell & van der Krogt, 2014).

Learning themes. The majority of participants described engaging in learning activities to develop their leadership and organizational skills. Women with positions of

hospital leadership were the most likely to describe engaging in learning activities related to interpersonal skills, for developing relations or improving communications. However, despite viewing interpersonal skills and personal characteristics as more important for effective leadership, the majority of participants described a learning focused on the managerial and organizational aspects of the leadership. This may be related to the inherent administrative demands imposed by the various leadership positions on women, who then, in order to cope, choose to hone their skills in those areas. Alternatively, the focus on organizational and administrative skills may be because these skills are easier to learn, acquire, and practice than interpersonal elements of leadership. In a study of the leadership styles of 232 physician managers, it was found that the two dominant styles involved managing tasks and controlling the work environment, indicating "a preference for working on tasks rather than dealing with people" (Chapman & Giri, 2017; Martin & Keogh, 2004, p. 102). The authors recommend shifting the focus from task-oriented to people-oriented in order to shift leadership style from transactional to transformational (Chapman & Giri, 2017). It has been suggested that self-awareness is "a key requirement for effective leadership development at the level of the individual medical leader" (p. 140). Consequently, effectiveness of a leader is increased by their ability to adjust their leadership style according to the situation (Chapman & Giri, 2017). In the present study, twelve participants (44%) described the importance of self-awareness. Nine of those participants held positions of academic leadership. This may be the result of personal experiences in leadership prompting self-awareness. Conversely, this may indicate a predisposition to this competency that in turn, allowed the participants to attain positions of leadership.

Learning activities. The majority of the participants described informal and non-formal ways of learning on their career paths. Informal learning referred mostly to on-the-job learning experiences. Informal ways of learning were previously described according to the intentionality of the activity and the awareness of the resulting

knowledge. Women who participated in these interviews described knowledge that was explicit and that was acquired through engaging in either intentional self-directed learning, or unintentional incidental learning situations. This research was not specifically designed to unearth implicit knowledge but rather relied on women's account of their learning. There is no consensus in the literature about the best approach for leadership development in medicine, or on the "optimal methods" for acquiring and fostering those skills and attitudes (Chapman & Giri, 2017).

A majority of participants (89%), regardless of presence or absence of leadership positions, described informal learning activities. It is not surprising that physicians engage with self-directed and experiential learning; those forms of learning are commonly used in medical education and training. This underscores the importance of hands-on learning for physicians. An exploration of medical students' perceptions about their medical school curriculum was conducted using focus groups. In that study, several students described the informal curriculum as facilitating learning "the essence of being a doctor," or learning the attitudes and skills needed for the "art of medicine" (Ozolins, Hall, & Peterson, 2008, p. 610). By contrast, the formal curriculum was expected to help transmit the objective factual aspects of the science of medicine (Ozolins et al., 2008). Studies reveal commonalities across disciplines on how leaders learn how to lead. It is suggested that leaders learn from four main sources: job experiences, trial and error, relations with others, and formal education (Brown & Posner, 2001). The findings of this study confirm the conclusions offered by Boud that "most academic development takes place in locations where academics spend most of their time," and despite not being always recognized as such, it is often more influential than formal education programs (Boud, 1999, p. 3).

It would be expected that the more women are exposed to varied experiences related to leadership, the more likely they are to build their knowledge and develop expertise. In this study, women who had academic or hospital leadership positions were

more likely to describe engaging in reflection (60%) compared to women with no leadership positions (29%). This may be related to external expectations placed on those in leadership, and on the availability of feedback or mentoring that could promote reflection. Learning from experience also meant for some participants to learn from their mistakes. Leaders in academic medicine are forced to "learn on the job," because they are chosen for their leadership positions based on their performance in research, education or clinical work, rather than on the "basis of demonstrated leadership and management skills" (Detsky, 2011, p. 88). The ability to rely on the acquired practical knowledge, independent of its theoretical basis, is viewed as an important aspect of the development of the practitioner (Schon, 1984; Teekman, 2000). The ability to learn from those experiences requires in addition to a reflective ability, the social and interpersonal support to coach the learner and to model the learning (Schon, 1984). "The power of reflection" has been described by participants as a central revelation in a peer mentoring program (Pololi & Evans, 2015). Descriptions of reflection and its practice imply a deliberate, conscious choice of engaging in the process, in order to achieve "deeper meaning and understanding" (Mann, Gordon, & MacLeod, 2009). Reflection is often instigated by events that cause "disruption in usual practice" (Mann et al., 2009, p. 297). These experiences may impose an emotional burden on the individual. Sarah's unexpected inability to succeed in her position of leadership led to an emotional response. However, she did not engage in a deliberate reflective process at the time, but chose to ignore that experience. According to Boud and Walker (1985), reflection on experiences unfolds in three steps: returning to experience, attending to feelings, re-appraising the situation (Boud, Cohen, & Walker, 1993). Audrey describes her interaction with her leader, the emotional response it triggered and her feelings. She then reflects on how she could've managed the situation and her response in a more productive manner. Reflection can also serve the learner to identify their learning needs and to help direct future activities (Mann et al., 2009; Schon, 1984). Jane describes this as taking the time to "be

in the moment," to reappraise her situation and her interests. Kate reflects on her perceived difficulty integrating a foreign culture and engages in self-directed exploration of linguistics. Incidental, unplanned learning opportunities prompted reflection in participants and led to them to engage in a deliberate course of action. For example, Mary's contact with young dying patients prompted her to reflect on life choices; she deliberately and consciously then chose family over sacrifices. Mann et al. (2009) define two dimensions of reflective practice: its iterative nature, and its depth. The iterative dimension involves revisiting the experiences, to explore different and future approaches. The depth of reflection ranges from superficial description of the experience to a deep level of exploration. It is recognized that with respect to reflection, "the deeper levels appear more difficult to reach, and are less frequently demonstrated" (Mann et al., 2009, p. 597). Teekman (2000) explored the reflective practice of nurses following "non-routine" situations, and found that nurses engaged frequently in reflective thinking-for-action, in order to guide their actions. As a second step, they demonstrated engaging in reflective thinking-for-evaluation, to reappraise their responses and to derive a better understanding of themselves and of the situation. At this level of reflection, participants may wonder how they would approach a similar situation differently. The author of that study did not find any participant who engaged in reflective thinking-for-critical inquiry, to reappraise the premises leading to the current conditions (Teekman, 2000).

Reflective practice in this present study was further analyzed in relation to stages of a career. Participants who are in the mid-career stages were the most likely to describe engaging in a reflective practice (69%), compared to those in early (37.5%) or advanced (33%) career stages. This finding may in part be explained by the need for professional choices that are anticipated by women in mid-career. Women early in their careers are focused on learning the environment and its demands, while women in advanced stages may be settled in their profession, or as Gladys says "comfortable" in the stage of their profession. In addition, reflection as a form of learning was compared across specialties.

Women with hospital-based specialties were most likely to described engaging in reflection (87.5%), compared to women in medical specialties (37.5%) or those in surgical specialties (36%). Reflective practice has been described as "an unfamiliar concept, and one that doesn't come naturally" to members of the medical community (Shemtob, 2016). The prevalence of reflective practice in hospital-based specialties needs to be explored further, to investigate the correlation between reflection and choice of specialty, or conversely to study the effect of various medical specialties on reflective practice. A less surprising finding, is the reliance of surgical specialties on experiential forms of learning, given the hands-on nature of the specialty. Table 13 describes the various learning activities by participants' specialty.

Table 13. Learning Activities and Participants' Specialty

	Hospital-based *n_1=8 (%)*	**Medical** *n_2=8 (%)*	**Surgical** *n_3=11 (%)*	***Totals*** ***N=27 (%)***
Self-Directed	4 (50%)	7 (87.5%)	6 (54%)	17 (63%)
Experiential	7 (87.5%)	2 (25%)	7 (82%)	16 (59%)
Reflection	7 (87.5%)	3 (37.5%)	4 (36%)	14 (52%)
Incidental	3 (37.5%)	5 (62.5%)	2 (18%)	10 (37%)
Mentoring	4 (50%)	5 (62.5%)	5 (45%)	14 (52%)
Workshops	4 (50%)	3 (37.5)	5 (45%)	12 (44%)
CoP	3 (37.5%)	3 (37.5%)	4 (36%)	10 (37%)

Several participants (63%), regardless of presence or absence of leadership, described engaging in self-directed learning of leadership skills, knowledge, and attitudes. Overall, participants in this study seemed to engage in self-direction as a process of gathering information rather as a goal of their development (Candy, 1991). In one example, one participant engages in the independent and solitary activity of online

exploration of American slang to better connect with her peers. Others describe self-directed activities that seek the input of other peers and colleagues, or that include participating in collaborative informal learning activities. Rachel reaches out to colleagues to develop the guidelines for her training program, Vera seeks to meet with peers to discuss leadership issues. Jane and Gladys describe the communities of practice to which they belonged.

Participants expressed and recognized different learning needs for their leadership development and career advancement. This reinforces the usefulness of a self-directed approach for the learning of leadership, since it is unlikely that a single educational formal or non-formal program can address the individual needs of the participants (Candy, 1995).

Several participants described managing interpersonal relationships as a challenge on their path to leadership. However, the majority (78%) of participants, regardless of presence or absence of a leadership position, engaged in activities that served to develop skills for task management. The dissonance between perceived challenges or needs and the learning may indicate one or a combination of the following: an incomplete assessment of the learning needs, difficulty finding and engaging in interpersonal and intrapersonal learning, and the assumptions about seeking answers. Assessing the learning needs requires the learner to engage in deep critical reflection of the situation and of the self. Tania recalls conflict in her work unit, being surprised at the challenges, discussing the possible reasons for the challenge. However, she gave no indication for engaging in activities to develop her skills or attitudes in the face of similar situations. Gladys discusses the advice she receives from her husband on managing interpersonal relationships. However, when asked, she denied engaging in professional coaching. The difference between perceived needs and actual learning activities may result from the ease of learning organizational and task-focused skills, compared to interpersonal or intrapersonal activities. Finally, Vera identifies the needs for her development, but does

not seek guidance from others to avoid appearing weak and needy. Patty similarly does not trust the workplace environment to open up about her learning needs.

Mentoring relationships can provide women and men with those needed resources on their path to leadership. Women in academic leadership were the most likely among participants to describe engaging in non-formal learning activities, such as mentoring, participation in workshops and communities of practice. It is not surprising that having an interest in leadership, or holding a position of leadership increases the likelihood of seeking learning opportunities related to the leadership role held. Similarly, having an interest in leadership may also prompt women to engage in those activities, setting them later on a trajectory toward leadership. Ursula, for example, comments that she is reluctant to seek leadership training programs; she perceived that participation in those programs would brand her as a leader, and she would then be given leadership roles despite the lack of resources. Non-formal learning activities were described as helpful in developing skills and know-how on topics related to leadership, such as negotiations. It also helped several women develop a network of like-minded women, thereby building communities of practice. Several women (Beatrix, Tania, Jane, Xena, Gladys) described participating in the development programs offered by the Association of American Medical Colleges (AAMC). All but one hold positions of academic leadership. Participation in similar national career development programs was associated with higher retention of women in academic medicine, compared to non-participating peers (Chang et al., 2016). The benefits of participation in national career development programs were seen as both individual and institutional. At the individual level, women described acquiring the skills needed for a career in academics. At the institutional level, this demonstrated a commitment to the professional and career development of women, thereby contributing to diversity in faculty composition (Chang et al., 2016). However, this association between participation in non-formal faculty development programs and retention in academic medicine may be skewed by a selection bias. Women who are

interested in career advancement in academic medicine are more likely to pursue such programs, and are more willing to commit the time needed. In this present study, a majority of women with academic leadership positions had participated in similar workshops, either at the national level, or within the institution. Based on personal knowledge and past experience, acceptance into these programs require applicants to formulate a detailed career plan that fits the program's agenda. This ensures that participants are personally engaged and supported by their institution on their paths to leadership in academic medicine.

Social context of learning. Communities of practice were described along their three defining elements by several participants, most of whom hold academic leadership positions (Wenger, 2011). In addition, a majority of participants (89%), regardless of presence or absence of leadership, described "colleagues" as the source of their learning. This was true for medical and technical related issues as well as leadership topics. Participants who hold leadership positions were more likely to describe learning from colleagues from outside as well as from within the institution; by contrast, those without leadership described mostly colleagues from the institution. This may denote the extended networks that women in positions of leadership have developed.

Several women (37%) described a perceived need for communities of practice throughout their careers. These were described by participants as networks of "like-minded" individuals, joined by a common interest in a particular topic, that provided support and a collective know-how on approaching problems. Participants described mostly communities of practice focused on leadership development, or women's issues in academic medicine, or building educational or faculty development programs.

The concept of community of practice is emerging in the medical field, because of its applicability to the profession of medicine. Some have even advocated for reimagining the medical school curriculum using the theoretical framework of communities of practice (Cruess, Cruess, & Steinert, 2018; Wenger, 2010). In relation to leadership

development, communities of practice can bridge the theoretical learning of concepts ("learning-as-acquisition") with the practical implications and applications in the workplace ("learning-as-participation") (Brown & Duguid, 1991; Morris, 2018).

Several participants, and half of those with academic leadership positions had experiences with constructs that could be defined as communities of practice (Wenger-Trayner & Wenger-Trayner, 2015). Those experiences were valued and considered beneficial to their career development. However, participants mostly described a hypothetical model of a community of "like-minded" individuals, to develop knowledge and skills needed on their career paths, to share relevant experiences and challenges, to promote reflection in the participants, and to provide validation of their ways of thinking. These models can be described as communities of practice with a goal of promoting the professional development of women in medicine. This goal is achieved by providing social, cognitive and emotional support for its members.

Communities of practice are based on the theoretical work of Jean Lave on "situated learning." In this theory, she views knowledge formation as a dynamic process situated in the various activities within a diverse group of individuals, resulting in continuous negotiations of the definition of success and failure (Lave, 2009). Learners' participation in the communities of practice evolves from "legitimate peripheral participation" to full, central involvement (Lave & Wenger, 1991). The community of practice is "a group of people who have common goals, established systems of communication, negotiation, and derivation of meaning, as well as shared ways of talking and doing things." (Cantillon, D'Eath, De Grave, & Dornan, 2016, p. 993). These concepts serve to expand Vygotsky's sociocultural theory where learning activities expand and stretch the development of the individual from its current state (Scott & Palincsar, 2013). Based on sociocultural theory, learning in a community of practice "is thought to occur through interaction, negotiation, and collaboration" bounded by "the norms and practices" of the community (Scott & Palincsar, 2013, p. 5). Those

communities serve to develop and define the identity of the participant and the range of practices (Cantillon et al., 2016; Wenger, 2010). Identity refers to how participants perceive themselves, how they are perceived, and how they process information. Practices refer to a "shared repertoire of experiences, stories, tools and ways of addressing recurring problems" (Cantillon et al., 2016, p. 993; Wenger, 2010). Participants who engage in communities of practice for leadership development would accordingly focus on learning to *become* leaders in identity and practice, rather than learning *about* leadership (Brown & Duguid, 1991). Implications of this model on leadership development in academic medicine are discussed in the section on recommendations.

Interpretation

In the previous section, the findings were analyzed based on the underlying themes they represent, and in connection with preexisting literature. In this section, a critical discussion of the themes serves as a synthesis of the findings and their implication. The researcher recognizes that the insights presented are the results of the experiences and perceptions of a group of twenty-seven women in a single academic site in the US. Generalizability of these findings to all women in academic medicine is limited. However, these results provide additional empirical support to the previously described factors that affect women's career paths in academic medicine.

Eligibility for Leadership

Participants in this study described the current eligibility criteria for leadership in medicine which includes recognition in academics and research background. There was an implicit acceptance of the legitimacy of leaders who hold these attributes. This acceptance of researchers as leaders may be an appropriate inference based on the

researchers' portfolio. Established researchers with name recognition have already demonstrated their leadership skills by managing teams of researchers, successfully securing funding and grants, and participating in national and international forums. However, the advantage granted to researchers for a leadership position imposes a de facto glass ceiling on women in academic medicine: given the research track criteria for leadership, there are fewer women who are considered as eligible or who view themselves as eligible for positions of leadership in academic medicine. Several factors have been described in explaining why fewer women engage and succeed on research tracks in academic medicine. These factors may involve extrinsic funding opportunities (Eloy et al., 2013), institutional support including hiring packages (Bates et al., 2016), and research or tenure track participation (D'Armiento et al., 2019). Increasing women's representations in positions of leadership would then require a two-pronged approach: a reappraisal of research tracks and funding opportunities for women, and a reappraisal of leadership eligibility in academic medicine. Both these factors argue against the call for women to lean-in. The accepted and normalized processes for eligibility to leadership are set by organizations and by the leaders of the medical community. It is more appropriate then, in the quest to increase women's representation in positions of leadership, and as Anne-Marie Slaughter noted (2012), to call on organizations to lean-in.

Furthermore, participants in this study point to a dissonance between effective and desirable leadership characteristics on one hand, and the expected and normative leadership practices on the other hand. Women in this research view effective leadership as requiring a set of inter- and intrapersonal characteristics. In addition, they favor this approach in their personal leadership practice. However, they observe that, in the study center and in academic medicine, value is disproportionately placed on financial and task-oriented attributes of leaders, rather than on interpersonal development. It would seem that in practice, given the hierarchical system in academic medicine, leadership is expressed as a transactional, managing position rather than a transformative opportunity.

Accordingly, women described the current leadership positions as primarily focused on financial gains and "putting out fires." By contrast, they value leaders who help develop those around them. Reframing the expectations and the roles of leadership in academic medicine toward a people-oriented focus may encourage more women and men in seeking those opportunities.

Motivation to Lead

Women who participated in this study shared insights consistent with the presence of self-efficacy. Other reports have questioned women's self-efficacy toward leadership, and have suggested that this may prevent women from seeking advanced leadership positions (Dannels et al., 2008). Regardless of presence or absence of leadership, women in this study were confident in their abilities, and recognized the constructivist approach for building the self-efficacy skills. However, these insights were gathered from a small sample in a single study site and may be biased by the self-selection process of the participants. Those who agreed to participate may represent a small sub-set of women faculty with a higher self-efficacy than the rest of the faculty members. In addition, further exploration of gender differences in self-efficacy toward leadership is warranted.

Women in this study shared their experiences of varying levels of gender biases. This study was conducted during a national time of reckoning with the pervasive and often insidious nature of gender biases in various aspects of social and academic life. Accordingly, there is an increased awareness of gender-based issues that results in identifying and recognizing the biases. However, based on the participants' reports, there is still a lag in academic medicine in recognizing and addressing the latent gender biases. Those biases were described by the participants in this study to range from being called by a first name rather than by a professional title, to being ignored or silenced at meetings, to being passed over for promotions, or to being held to different standards than their male colleagues. Colleagues, direct unit leaders, and leaders in the center were

described as often unaware, sometimes dismissive of the experienced bias, and occasionally the instigators of those biases. Administrators and other health-care professionals may also be instigators of these biases, regardless of their gender. Repeated experiences of gender biases and prevalent gender stereotypes in the workplace may in turn influence women's self-efficacy.

Furthermore, occurrence of other biases related to ethnicity, religion, or sexual orientation were not addressed in this study. While participants in this study identified with various backgrounds, the researcher recognizes that the narrative is dominated by the voices of the larger group of participants: white female participants. The study was not designed to explore the interrelation between the various identities we all hold, but rather focused on the isolated gender issues. To isolate the influence of gender on a career path, a comparative exploration of the perceptions of other genders, including men and queer faculty, is needed. Recommendations for further research are presented in another section.

Possibility to Lead

Participants in this research reported two observations about the study site which could influence a career path: the inbred nature of the system, and the difficulty of navigating the political environment.

Women who joined the study center from other institutions reported absence of effective on-boarding measures to ease their transitions. This resulted in longer transition periods, possibly delaying women from forming meaningful connections, from establishing networking and mentoring relationships. Accordingly, some of the participants felt they were outsiders to the system and to its culture. Conversely, the hiring packages were perceived as favoring the outside recruits compared to the internal faculty, especially for faculty who are hired on the tenure track. In addition, the study center is a complex organization with two independent entities: the academic center and

the hospital center. The interplay between those two entities generates a complex bureaucracy that is difficult to navigate, and may contribute to the perceived lack of transparency.

Addressing these challenges may require a detailed, comprehensive, and personalized on-boarding process for all faculty joining the medical center. In addition, a transparent and diligent oversight of hiring practices and packages should be extended to both internal and external recruits. This is presented in the recommendation section.

Furthermore, the promotions process within academic medicine is perceived as an "artificial definition of what success is" (Walda). Several women felt that the requirements for promotions did not accurately capture or accommodate some of their achievements. These perceptions may also be shared by the male faculty members of the study center. Accordingly, the successful promotion of faculty in academic medicine may require the following: educating faculty and leaders on the process, reevaluating promotion criteria to ascertain transparency and consistency, and expanding definitions to accommodate various non-traditional contributions.

Learning to Lead

This study further serves to support the preexisting evidence on the importance of informal ways of learning in the workplace. Yet, traditional medical education has focused on formal ways of learning that rely on a predetermined curriculum, as well as rigorous teaching methods and assessment tools. Women who participated in this study learned best from colleagues, in non-formal settings that allow the free sharing of ideas and the possibility of follow-up. Including informal ways of learning into the design of faculty development programs may benefit all faculty. It would entail however a reevaluation of the medical community's understanding of what constitutes medical education. Informal ways of learning require three elements: experiences, context, and reflection. Having varied and appropriately challenging experiences at work allows

faculty to learn-on-the job and learn by trial and error. The environment or context of the learning provides the appropriate challenge and support for the growth of the faculty and their development. Critical reflection is a personal behavior but a learned skill, which is prompted and promoted through feedback, peer or group mentoring. Reflection and learning may be related to the nature of the specialty and its associated practice. Faculty in interventional specialties may have different reflection practices than those in cognitive specialties. Future research should explore whether different learning patterns and activities are favored based on the demands and expectations of the medical specialty.

Transfer of knowledge among practitioners in informal ways of learning may take the powerful form of story-telling. It may also be facilitated by engaging in communities of practice. The concept of communities of practice has been introduced in recent years as a method to develop physicians' identities during medical school (Cruess et al., 2018). Similarly, the concept is readily applied to faculty development endeavors: women in this study described a natural propensity to organize or to seek communities of practice. In addition, in the recent past years, social media has helped physicians and women in particular develop and spread such communities of practice (Shillcutt & Silver, 2018).

Summary

The perceptions of full-time women faculty toward leadership positions and career paths in academic medicine was explored. Effective leadership in academic medicine was described from the lens of humanistic theory, with a focus on interpersonal relationships and aiding the growth of others.

It is recognized that women in academic medicine experience several challenges on their career paths (Bickel et al., 2002). This study confirmed the body of literature on the presence of gender biases in the workplace in academic medicine. Those biases were

discussed with regards to their effects on women's promotions, access to mentoring, and to career advancement. Gender differences extended to home life; despite strong and supportive partnerships, women with dependent care responsibilities reported shouldering a larger cognitive and emotional burden than their partners. Seventy-four percent of women in this study reported feeling motivated on their career paths by the desire to make a difference in other people's lives. The desire to have influence and make difference spanned different domains and interpersonal interactions: patients and their families, trainees, colleagues, educational programs, and the workplace. In addition to their motivation, progression on a career path was facilitated by the various interpersonal relationships that women cultivated. These included relationships with mentors, peers and colleagues, and with life or domestic partners. Despite their value of the interpersonal aspect of a leadership style, women in this study focused their learning activities on task management, acquired through informal and non-formal ways of learning. Most of the learning was through on-the-job experiences and through incidental, trial and error approaches. There was no evidence that women engaged in deep transformative critical reflection, but rather a reappraisal of the situation and of the self in the context of the experience. Likewise, self-directed learning was more likely to be described as a process of learning rather than as a goal. However, several women described the benefits of non-formal workshops for leadership development. The restricted accessibility of those workshops, the associated expenses and the lack of evidence on knowledge transferability limits the effectiveness and the widespread use of those workshops. Communities of practice that have emerged from those workshops may offer a viable support for the professional development and career advancement of physicians in academic medicine.

Revisiting Assumptions

Following data collection, analysis and synthesis, and the on-going reflective process, the researcher revisited the assumptions that were presented in Chapter I. The

first was that women in academic medicine may view leadership positions as mostly an administrative burden that would detract from clinical work and from family life. This assumption proved to be accurate as participants in this study described the administrative expectations of leadership positions and the associated sacrifices in time and patient care.

Second, it was assumed that there are conscious and unconscious gender biases, held by men and women in academic medicine that have the potential to affect women's careers. This assumption was proven valid, as is detailed in Chapter V, under Finding 2 on gender biases in the workplace. Third, it was assumed that women are less likely to believe in their self-efficacy to hold institutionally defined advanced leadership positions in academic medicine. This assumption was refuted by the data of this study. A majority of participants in this study conveyed self-efficacy toward leadership, and a confidence in their abilities to learn and develop as leaders. Fourth, women are able to learn to overcome those challenges and can learn from the process of seeking and holding a leadership role. This assumption was partially verified. Women in this study described learning from their experiences in various incremental leadership roles. However, some of the challenges faced by women in academic medicine cannot be overcome by an individual, but rather need the awareness and support of the leaders in the organization. Fifth, it was assumed that academic institutions can foster leadership trajectories by recognizing and addressing perceived challenges to leadership positions for their women faculty, as well as to provide opportunities for the learning needed to navigate those challenges. This is in part true: academic institutions can provide significant support for those seeking leadership through mentorship, learning opportunities and a fair and transparent allocations of resources. However, characteristics of positions of leadership in academic medicine, included eligibility, responsibilities, and practice are perceived as unattractive to women in academic medicine. To render leadership in academic medicine attractive, organization may need to redefine the concept of the academic leader. Finally,

the researcher assumed that women will engage meaningfully with the research questions and that they will honestly and candidly report their experiences and share their learning with the researcher. This proved to be true. The participants' overwhelmingly positive, welcoming and encouraging responses to this research supports the need for continued exploration of workplace conditions to benefit physicians in academic medicine, their trainees, patients, and the medical field.

Conclusions and Recommendations

Women remain underrepresented in positions of advanced leadership in academic medicine (Lautenberger, 2014). Although 50% of medical school graduates are women, only 15% of department chairs and 16% of medical school deans are women (Lautenberger, 2014). The lack of progress over the past decade refutes the hypothesis of a pipeline issue, because the representation of women in advanced leadership positions does not mirror the overall gender make-up of the workforce. In 2014, women made up 38% of the full-time faculty in academic medicine (Lautenberger, 2014). Women may face "disproportionately bigger challenges" on their career paths, compared to men (Bickel et al., 2002). These have been described in the available literature and include lack of mentoring, presence of gender biases, unequal pay, and difficulty attaining work-life balance.

Despite the limitations described in Chapter III, conclusions are presented in the following section. In addition, recommendations based on the results of this study are presented for the women faculty in academic medicine, for faculty mentors and leaders, for institutions of academic medicine, and for future research.

Conclusions

First, leadership in academic medicine is perceived by women who are full-time faculty members as an administrative role that detracts from patient care. Eligibility for leadership is described as requiring extensive academic and research productivity. Constant availability of leaders is anticipated. Accordingly, given these factors, the current leadership model in academic medicine may or may not be attractive for many women in academic medicine.

Second, women in academic medicine face persistent and widespread gender bias in the workplace. This manifests as incivility and microaggressions. Women perceive being held to different communications and behavioral standards than their men colleagues. In addition, they are penalized when they deviate from the expected gendered norms.

Third, women describe their partners as strong, dependable supporters of their careers. Nevertheless, women describe shouldering a larger portion of the cognitive and emotional burden of dependent care, despite the presence of a reliable child care system.

Fourth, participants describe the facilitating effect of mentoring relationships on their career advancement. They also described the benefits of establishing networks of like-minded individuals to discuss topics relevant to leadership in academic medicine.

Finally, learning about leadership in academic medicine happens through on the job experiences, pointing to the importance of incremental leadership positions for optimal learning. In addition, women engage in reflection of their performance and the situation, and participate in self-directed activities to optimize their performance, and to develop the skills needed. The concept of communities of practice may provide valuable resources for women in academic medicine, who are seeking to advance on a career path toward leadership.

Recommendations

The following recommendations are advanced based on this study's findings, their analysis, and a review of the relevant literature. They are geared toward women in academic medicine, faculty leaders and mentors in academic medicine, institutions of academic medicine, and for future research.

Recommendations for women in academic medicine. The researcher offers the following recommendations for women in academic medicine:

1. Women in medicine should engage in an honest, rigorous, detailed, and methodical critical reflection on what drives their behaviors, what motivates them, and where their priorities lie. The researcher believes in the need to extricate oneself from gender normalized societal expectations. Through critical reflection women can seek to identify their being-in-self potential, rather than accept the appropriate cultural and social beliefs where the focus for women is on being-for-others.
2. Equally important to the wellbeing and success of women is the ability to view oneself as a multidimensional person as a physician, as a woman, as a partner, caregiver and more. The researcher advocates for physicians and women in particular to recognize, embrace, and value the different aspects of the self, and its importance in shaping our choices and our career paths.
3. Based on participants' explicit advice and implicit reflections, the researcher recommends viewing success in managing work-life as a constant negotiation between competing priorities. This also means accepting that seeking perfection in one's various roles may be an aspirational but is not a normative or expected state.

Recommendations for faculty leaders and mentors.

1. Faculty leaders and mentors can provide invaluable contributions to the careers of women (and men) in academic medicine. This should start by redefining both the

mission and the success of leadership in academic medicine. Leaders should view their mission as being the advocates of the people around them. Their success is also related to the success and the thriving of the faculty in their units. This shift in perspective entails listening, caring and promoting the faculty in academic medicine. Leaders can then identify professional development opportunities and engage women to participate in those roles.

2. Faculty leaders and mentors should be aware of the prevalent gender biases that women face in their careers in academic medicine. They should recognize microaggressions, and be able and willing to advocate on behalf of their faculty. They should also strive to avoid perpetuating those gender stereotypes or gendered expectations.
3. Faculty leaders should develop the situational awareness to know what is happening in their work units, to have an appreciation of the needs of the faculty, the challenges they face and their expectations. By adopting a proactive and caring attitude, leaders may preempt unpleasant developments in their units and establish a supportive work environment for all.

Recommendations for institutions of academic medicine. Slaughter (2012) believes that instead of asking women to lean-in, we should be asking organizations to lean-in, thereby shifting the responsibility from the individual to the institutions and to society.

1. Academic institutions should explore the feasibility and the benefits of incorporating leadership training into the medical school curriculum. Those concepts may not have directly applicability to medical students at that stage of their professional development. However, omitting these topics from the medical education curriculum may falsely indicate to trainees that these topics are not important for the development of their future careers (Hargett et al., 2017). In addition, these skills are thought to reflect the importance of interpersonal skills

and attitudes in medical practice, regardless of leadership positions. As described by one participant, "it's not just leadership training. This is like, people skills." (Walda)

2. Leaders in academic institutions should develop a comprehensive system for oversight over hiring practices, and the hiring packages that are offered to new recruits. This mechanism of oversight should extend to all faculty, whether they are recruited internally or from outside the institution. The system should advocate for transparency, fairness, and accountability. Establishing such a mechanism would decrease the impact of implicit bias and would prevent the perpetuation of the existing gender pay gap (Freund et al., 2016).
3. Women's participation in national meetings, which serve to increase visibility and establish professional networks, remains limited by accessibility and by absence of reliable childcare. National societies of medical specialties should consider establishing childcare programs onsite, to support parental attendance at those meetings.
4. Finding the time for women in medicine to engage, to develop and to advance their careers while maintaining a work-life balance requires institutions to "think outside the box" for creative solutions. Time flexibility should be offered and incorporated into the workplace without risk of financial sacrifices or career retributions.
5. Academic medicine would benefit from revisiting the current paradigms that inform the choice of academic leaders, and that define the leadership roles. Research and academic productivity, which are frequently used in selecting leaders for academic positions, do not predict effectiveness as a leader and are not, as indicated by this research, associated with reliable leadership skills. Furthermore, they place women at a disadvantage because women largely lack the national grant funding and research productivity of men.

6. Women in medicine view the current availability requirements and the administrative responsibilities of leadership in academic medicine as a deterrent to pursuing them. Academic institutions that desire to attract women and men to become leaders in advanced positions will benefit from changing the work commitment expectations of leaders in academic medicine. An exploration of alternative models of leadership that decrease the reliance on a hierarchical scheme is warranted.
7. Academic institutions are commended for supporting the non-formal learning activities of full-time faculty who are interested in leadership. However, these programs are limited in their reach and can only help select few faculty members at any time. Instead, establishing communities of practice for those seeking leadership is can bridge the gap, provide ongoing resources for women, at a lower financial cost to the institution. Those communities of practice are then sponsored by the institutions, across specialties, are championed by interested faculty members, and perpetuated by the members and their successes.

Recommendations for future research. The following are few recommendations for future research to continue the exploration of leadership in academic medicine

1. This study did not explore the intersectionality of gender with race. Double jeopardy phenomenon has been described for women who are also underrepresented minorities. Cultural factors were apparent for foreign medical graduates and warrant further exploration.
2. The perceptions of men toward their career paths should be similarly explored to identify similarities and differences in perceptions, especially relevant to the work-life balance.
3. Several participants described the perceived effectiveness of faculty development programs in building their leadership skills, and providing needed resources. Such

programs impose a financial and time cost for individuals and the sponsoring programs. A thorough exploration of the effectiveness of such faculty development programs should be assessed longitudinally, across specialties and institutions. In addition, a longitudinal follow-up of participants in this study and their career paths should be undertaken.

It is befitting for this study to conclude with the words of one of the participants, Hannah, with the hope that this work serves to at least partially address this query:

> I would just love to hear about other people's experience, other women's experiences, and what they're doing to make it work or not work. Or is it just not possible to be totally satisfied in all arenas…because then at least you would know. I think part of it is that you have this idea that [..] there's some balance to be made, and once you find that ratio, you'll be fine. But I wonder if it really exists, and it would just be great if somebody could just tell you…because then you could stop trying. You could just say: 'I'm going to pick what's more important to me and do it.' I don't know if anybody knows.

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Appendix A

Conceptual Framework

I. **Characteristics of effective leadership**
   1. Personality attributes
      a. Possessing innate personality traits; "Big five" traits – extraversion, conscientiousness, agreeableness, emotional adjustment, intelligence and inquisitiveness
      b. Displaying observable and learned behavioral characteristics: communications, technical and domain expertise
      c. Leaders with charisma
   2. Focus of leadership
      a. Managing self:
         i. Organization and time management
         ii. Self- aware of one's strengths and challenges
         iii. Self-efficacy or belief their abilities in a specific situation
         iv. Can set a purpose for a team or an organization
         v. Formulate and effectively communicate a compelling vision
         vi. Self-awareness
         vii. Balanced processing
         viii. Internalized moral perspective
      b. Managing tasks:
         i. Able to identify and strategize tasks
         ii. Productivity and outcome focused
         iii. Having a clear understanding of organizational goals
         iv. Challenge the status quo
      c. Managing people:
         i. People and subordinate focused
         ii. Transactional leadership:
            1. Leveraging rewards for subordinates to promote desired outcomes
            2. Refrain from using punishments
         iii. Optimize the interpersonal influence on others through clear communication
         iv. Can motivate others toward a shared goal
         v. Support the needs of others
         vi. Relational transparency
         vii. Supports followers toward authenticity
         viii. Supports personal growth of followers

II. **Challenges for Leadership**
   1. Environmental and cultural challenges
      a. Presence of explicit and implicit gender biases
      b. Stereotype threats and fitting the expectations for one's social role; expected to display communal roles, penalized for agentic characteristics

c. Gatekeeping / leaders helps those who they identify with

2. Structural and infrastructure
   a. Absence or difficulty of mentoring, including peer mentoring groups
   b. Access to formal leadership programs
   c. Established and active women societies at the institution or national levels
   d. Presence of role models
   e. Sponsors and the need for increased visibility
   f. Promotion guidelines may favor a research track in academics
3. Situational or work-life balance
   a. Dependent care demands
   b. Need to develop strategies to protect life sphere from demands of work
   c. Childbearing may result in career interruptions
   d. Willingness to relocate or change institutions
4. Motivational
   a. Defining their career goals
   b. Ability to negotiate for what they really want
   c. Risk-averse of new situations or situations
   d. Confirming to gender role expectations, may allow men to dominate, if leadership seen as male job
   e. Focus on collaborative work rather than individualistic performance and recognition

III. **Learning to become leader**

1. Learning Themes:
   a. Managing tasks
   b. Develop administrative programs
   c. Manage training and educational programs
   d. Communication skills
   e. Self-awareness
   f. Situational awareness
   g. Technical knowledge
   h. Medical knowledge
2. Learning Activities:
   a. Formal Learning through advanced degrees or certificate programs
   b. Non-formal Learning
      i. Conferences, workshops, communities of practice
      ii. Mentoring
      iii. Debriefing
      iv. Teaching
   c. Informal
      i. Self-Directed
      ii. Incidental
      iii. Trial and error
   d. Tacit
   e. Experiential learning
      i. Experiences lead to learning when varied in scope

ii. Challenges can promote learning if adequate.
f. Reflection allows reframing of previous knowledge to make meaning
i. Defining topic of reflection
ii. Defining practice of reflection
iii. Defining depth of reflection

3. Social Learning Context
a. The importance of context to provide support through networks
b. Knowledge sharing in the workplace
i. Socialization or sharing tacit knowledge
ii. Combination or sharing explicit knowledge
iii. Externalization or converting tacit knowledge to explicit
iv. Reflection or converting explicit knowledge to tacit
c. Availability of feedback
4. Individual Orientation - Social cognitive theory
a. Motivators
i. Extrinsic
ii. Intrinsic: Relatedness (affiliation)/Competence (effectiveness)/Autonomy (self-determination)
b. Goal orientation in appraising abilities and challenges
i. Avoid Performance Goal orientation
ii. Performance Goal orientation
iii. Mastery or Learning Goal orientation
c. Self-efficacy: belief in capacity to complete a task in a given context.
i. Leadership self-efficacy manifesting as:
1. Seek learning opportunities
2. Feel competent to lead others
3. Response to challenges
4. Identifies resources to help in task completion
ii. Leadership self-efficacy can be developed by:
1. Mastery experiences – appropriately challenging experiences
2. Role modeling –
3. Social persuasion
4. Physiological cues

Appendix B

Coding Scheme

CODING CATEGORY		CODING KEY
Leadership characteristics in medicine		
Managing tasks	Organization skills	MT-org
	Effectiveness	MT-eff
	Financial growth	MT-fin
	Research productivity	MT-res
Managing people	Managing-up	MP-up
	Managing-down	MP-dwn
	Communication skills	MP-CS
	Knowing the needs	MP-KN
	Mentoring	MP-Men
	Sponsorship	MP-sp
	Listening skills	MP-lis
Management of self	Emotional intelligence	MS-EI
	Self-control	MS-con
	Situational awareness	MS-awa
	Ethics	MS-E
	Values	MS-V
Personality characteristics		PersCh
Facilitators and Challenges on career Path		
Environmental		
	Gender biases / differences	ENV-GB
	Having to prove oneself	ENV-one
	Lack of women mentors	ENV-WoM
	Belonging / Community	ENV-com
	Gatekeeping	ENV-gate
	Leading without a title	ENV-ti
	Recognition of time and effort	ENV-rec
	Resistance to chance	ENV-res
	Tasks vs opportunities	ENV-T/O
	Token appointments	ENV-tok
	Experiences/finding a niche	ENV-nich
	Opportunities	ENV-Opp
	Understanding the politics	ENV-Pol
	Women in leadership	ENV-WIL
	Work environment and colleagues	ENV-coll
	Networks and connections	ENV-netw

Structural		
	Leading others	STR-LeadO
	Time	STR-ti
	Committee work	STR-com
	Defining success	STR-sux
	Defining process	STR-proc
	Work schedules	STR-wksch
	Efficiency of the system	STR-eff
	Transparency	STR-trans
	Resources - equipment	STR-res-q
	Resources - offices	STR-res-o
	Resources - personnel	STR-res-p
	Pay and compensation	STR-pay
	Productivity expectations	STR-prod
	Titles vs roles	STR-ti
	Visibility	STR-vix
	Bureaucracy	STR-bur
	Interaction with leaders	STR-IntLe
	Mentors	STR-ment
	Sponsors	STR-spon
	Having information	STR-inf
	Funding and grants	STR-fund
Situational		
	Home partners	SIT-Part
	Geographic anchoring/mobility	SIT-Geo
	Dependent care	SIT-dep
	Work-life balance	SIT-WKL
	Role models	SIT-role
	Time	SIT-ti
Motivational		
	Personal values	MOT-Per
	Desires and interests	MOT-Des
	Self-efficacy and motivation	MOT-eff
	Mindset	MOT-mind
	Vision and strategy	MOT-vis
	Gender roles and stereotypes	MOT-gen
	Negotiation skills	MOT-neg
	Relational challenges	MOT-rel
	Engaging in politics	MOT-pol

Rewards and Sacrifices		
	Patient Care	RwSx-PC
	Administrative /operational	RwSx-admin
	Training program advances	RwSx-train
	Promotion	RwSx-prom
	Personal recognition	RwSx-rec
	Making a difference	RwSx-diff
	Having influence	RwSx-infl
	Enjoying the work	RwSx-work
	Home life	RwSx-home
	Research and publications	RwSx-pub
	Self-affirmation	RwSx-affirm
	Time - Personal	RwSx-tiPer
	Time – family	RwSx-tiFam
	Time – away from patient care	RwSx-tiPC
	Well-being	RwSx-well
	Leading others	RwSx-leadO
	Mentoring others	RwSx-mentO
	Getting the job done	RwSx-job
Learning paths		
Learning Themes		
	Communications	LT-comm
	Interpersonal relationships	LT-inter
	Situational awareness	LT-sitaw
	Self-awareness	LT-selfaw
	Training program improvement	LT-PD
	Administrative skills	LT-admin
	Medical knowledge	LT-MK
	Technical knowledge	LT-TK
Learning Activities		
	Experiential	LA-Ex
	Observation	LA-obs
	Self-directed	LA-SDL
	Incidental	LA-Inc
	Growing-up / developmental	LA-Dev
	Reflection	LA-ref
	Feedback / debriefing	LA-FB
	Mentoring	LA-ment
	Workshops	LA-WS
	Meetings	LA-mtg
	Formal	LA-form

Social Learning Context		
	Self	SLC-self
	Partners	SLC-part
	Family members	SLC-fam
	Colleagues	SLC-coll
	Leaders	SLC-lead
	Patients	SLC-pts
	Trainees	SLC-train
	Societies / networks	SLC-soc
Learning facilities		
	Work-sponsored	LF-WS
	Self-sponsored	LF-Self

Appendix C

Interview Email Invitation

Dear [colleague],
I am an Associate Professor in the department of Anesthesiology and a doctoral student at Teachers College, Columbia University, with a focus on adult learning and leadership.

I am writing to request your participation in an IRB approved research project (Teachers College IRB #18-126 / CUMC IRB #AAAR6745). This research project that I am conducting explores the perceptions of leadership among women in academic medicine, and what factors affect their career paths, and contribute to their underrepresentation in leadership positions in academic medicine. It is anticipated that, based on the findings of this research project, recommendations can be made for the professional development and career advancement of women in academic medicine, in particular of those seeking academic leadership positions.

I am contacting you because you are currently a full-time faculty at Columbia University Medical Center. I am requesting your participation in an interview, conducted in-person, at a time and location most convenient to you. The interview should take about forty-five to sixty minutes. It will consist of questions related to your career in academic medicine, as well as a demographic questionnaire. If you agree to participate, I will also ask that you complete a survey that looks at your leadership self-efficacy. If you decide not to participate in the interview, you will still have the opportunity to complete the anonymous, web-based survey which will be accessed through a separate email.

The interviews will be audio recorded and transcribed for analysis purposes and to allow me to engage fully in our conversation. To ensure privacy and confidentiality, names will be altered and pseudonyms used. Details about past experiences, events and persons will be masked. All documents and files will be stored electronically in password protected accounts. No one else will have access to this information. The results of this study will only be used for the stated research purposes; when making recommendations, data will be presented in aggregate form.

Please let me know by replying to this email if you will be able to participate in this research as described.

Please feel free to contact me should you have any questions, comments or concerns about the research project or this survey.

Sincerely,

Maya Jalbout Hastie, MD
Associate Professor of Anesthesiology at CUMC
Adult Learning and Leadership Program
Teachers College, Columbia University

Appendix D

Informed Consent

Protocol Title: Perceptions of leadership among women in academic medicine: A case study comparing the perspectives of full-time faculty with and without institutionally defined leadership titles
Subtitle: Interview Consent
Principal Investigator:
Maya Jalbout Hastie, MD
646-469-6299
mj2081@cumc.columbia.edu

INTRODUCTION

You are being invited to participate in this research study called "Perceptions of leadership among women in academic medicine: A case study comparing the perspectives of full-time faculty with and without institutionally defined leadership titles." You may qualify to take part in this research study because you are a women faculty, and have full-time academic appointment at Columbia University Medical Center (CUMC). Approximately thirty-four people will participate in this study and it will take 45 to 60 minutes of your time to complete.
This study has not received any funding.

WHY IS THIS STUDY BEING DONE?

This study is being done to determine how women perceive leadership in academic medicine, what challenges or facilitates seeking and achieving leadership roles, and how women in leadership learned to navigate those paths and what they learned in the process.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY?

If you decide to participate, you will be interviewed by the principal investigator. During the interview, you will be asked to discuss your past leadership experiences and your role in academic medicine**.** This interview will be audio-recorded. After the audio-recording is written down (transcribed) the audio-recording will be deleted. If you do not wish to be audio-recorded, you will not be able to participate. The interview will take approximately forty-five minutes. You will be given a pseudonym or false name/de-identified code in order to keep your identity confidential.
Prior to the interview, you will be asked to fill out an online questionnaire about your views toward leadership. This will take about fifteen minutes. All of these procedures will be done at a place and time that is convenient to you.

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

This is a minimal risk study, which means the harms or discomforts that you may experience are not greater than you would ordinarily encounter in daily life while taking routine surveys or engaging in deep conversation. However, there are some risks to consider. You might feel embarrassed to discuss problems that you experienced in the past that are related to this research. **However, you do not have to answer any questions or divulge anything you don't want to talk about. You can stop participating in the study at any time without penalty.** The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a pseudonym instead of your name, masking actual events and names by using code words, and keeping all information on a password protected computer and locked in a file drawer.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

There is no direct benefit to you for participating in this study. Participation may benefit academic medicine to better understand the best way to help women advance into leadership positions.

WILL I BE PAID FOR BEING IN THIS STUDY?

You will not be paid to participate. There are no costs to you for taking part in this study.

WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS?

The study is over when you have completed the interview, and filled out the online questionnaire. However, you can leave the study at any time even if you haven't finished.

PROTECTION OF YOUR CONFIDENTIALITY

The investigator will keep all written materials locked in a desk drawer in a locked office. Any electronic or digital information (including audio recordings) will be stored on a computer that is password protected. What is on the audio-recording will be written down and the audio-recording will then be destroyed. **De-identified codes will be stored on a master list that is kept locked and separate from the other list of codes.** An online professional transcription service is used for transcribing the audio interviews into documents that can be analyzed. No identifying information will be shared with the transcription service.

HOW WILL THE RESULTS BE USED?

The results of this study will be published in journals and presented at academic conferences. Your name or any identifying information about you will not be published. This study is being conducted as part of the dissertation of the principal investigator.

CONSENT FOR AUDIO RECORDING

Audio recording is part of this research study. You can choose whether to give permission to be recorded. If you decide that you don't wish to be recorded, you will not be able to participate in this research study.

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?

If you have any questions about taking part in this research study, you should contact the principal investigator, Maya Jalbout Hastie, MD, at 646-469-6299 or at mj2081@cumc.columbia.edu.

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email IRB@tc.edu. Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 1002. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

PARTICIPANT'S RIGHTS

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty
- The researcher may withdraw me from the research at his or her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- I should receive a copy of the Informed Consent document.

Appendix Ea

Interview Protocol for Women who are in Leadership Positions

1. Tell me about your current position in this institution. How did you come to be in your current leadership role?
    a. How would you describe your current roles and responsibilities?
    b. How would you describe yourself as a leader?

2. I'm interested in knowing how you got to be where you are today. Let's try to map your leadership path on this graph going back in time as much as you find necessary. Think of the times where you were in a leadership position. *Probes as needed for each salient/inflection time point*
    a. What did having that role mean to you?
    b. What, if anything, did you enjoy about that role?
    c. What, if anything, was challenging to you in that role?

3. Let's talk about how you became interested in leadership. At what point do you think you became **interested** in a leadership role? (*May not have recognized or formulated interest)*
    a. When did you start **pursuing** a leadership role? How did you go about it?
    b. What helped you the most at that stage?
    c. With what did you struggle the most at that point?

4. What was a "quantum leap" moment in your career, where you had more responsibilities, challenges, and expectations than before?
    a. Who or what helped you at that stage?
    b. What did you feel you had to overcome to succeed?
    c. What did you have to develop in yourself to make it?
    d. What is the most important lesson you learned from that process?

5. We talked about some of the challenges you have faced at different stages of your career. Overall, along this career path that led you to where you are today, what was most challenging for you?
    a. What or who helped you overcome those challenges?
    b. What did you have to learn to overcome? How did you go about that?

6. On the flip side, what do you feel has been most rewarding to you in your career?

7. You interact with several leaders in this institution. What behaviors and attitudes do you see in leaders around you? What behaviors do you think they should be exhibiting to be most effective in this environment?

8. What advice do you have for women who are interested in a leadership role in academic medicine?

9. If you could go back in time and change anything on your career path, what would it be? Why?

10. What is next for you in your career?

Appendix Eb

Interview Protocol for Women who are not in Leadership Positions – *no stated interest*

1. Tell me about your current position in this institution.
    a. How would you describe your current roles and responsibilities?
    b. What do you think people at work see as some of your qualities?

2. I'm interested in knowing how you see your career path, from as long as you think, till now and going forward. Let's try to map your career path on this graph, going back as far as you want. *Probes as needed for salient/inflection points (especially if previous leadership positions)*
    a. What other roles and responsibilities have you held in medicine or in other settings, and for how long?
    b. What did having that role mean to you?
    c. What, if anything, did you enjoy about that role?
    d. What, if anything, was challenging to you in that role?

If previous leadership position: Tell me the circumstances of why you are not in that leadership role anymore
If no previous leadership positions: Were you ever interested in a leadership position? Why/ why not? How about in the future?

3. Have you ever **pursued** a leadership position in medicine? Why/ why not? in other contexts? Why/ why not?
    a. What do you feel was most challenging for you in trying to get to a leadership role?
    b. What would have been helpful to you at that point to get what you wanted?

4. Do you envision yourself taking on a leadership role in the future? Why/ why not? *Probes as appropriate*:
    a. *If yes*: What would that role look like? What do you think needs to happen for your career to advance toward a leadership role?
    a. *If not*: What would need to change around you for you to be interested in a leadership role?

5. What do you think it takes to be a leader in academic medicine? How might it be different for men and women?

6. What characteristics do you see in leaders around you in academic medicine?

7. Think of someone you know, who is or was in a leadership position in academic medicine, and whom you perceive as an effective leader. What makes them an effective leader in your opinion?

8. What do you want for the next stage of your career? Have you thought of what or who can help you get there?

Appendix Ec

Interview Protocol for Women who are not in Leadership Positions – *with stated interested in leadership*

1. Tell me about your current position in this institution.
   a. How would you describe your current roles and responsibilities?
   b. What do you think people at work see as some of your qualities?

2. I'm interested in knowing how you see your career path, from as long as you want, till now and going forward. Let try to map your career path on this graph, going back as far as you want. *Probes as needed for salient/inflection points (especially if previous leadership positions)*
   a. What other roles and responsibilities have you held in medicine or in other settings, and for how long?
   b. What did having that role mean to you?
   c. What, if anything, did you enjoy about that role?
   d. What, if anything, was challenging to you in that role?

   If previous leadership position: Tell me the circumstances of why you are not in that leadership role anymore
   If no previous leadership positions: Were you ever interested in a leadership position? Why/ why not? How about in the future?

3. Have you ever **pursued** a leadership position in medicine? In other contexts? Why/ why not?
   a. What do you feel was most challenging for you in trying to get to leadership?
   b. What would have been helpful to you at that point to get what you wanted?

4. What makes you interested in a leadership role? What would that role look like for you in the future?

5. What do you think needs to happen for your career to advance toward that role?
   a. What steps have you taken toward a leadership role?
   b. What or who can help you get there?
   c. What do you think are some of the likely challenges that will face you? how will you prepare to tackle them?

6. What do you think it takes to be a leader in academic medicine? How might it be different for men and women?

7. What characteristics do you see in leaders around you in academic medicine?

8. Think of someone you know, who is or was in a leadership position in academic medicine, and whom you perceive as an effective leader. What makes them an effective leader in your opinion?

Appendix F

Demographic Questionnaire for Interviews

1. Years in practice since completing last year of training:
    a. 0-5 years
    b. 6-10 years
    c. 11-15 years
    d. 16-20 years
    e. > 21 years
2. Departmental affiliation

3. Current Academic rank
    a. Instructor
    b. Assistant
    c. Associate
    d. Professor
4. Do you hold or ever held a position of leadership? y/n
   If yes, please describe:
5. Age

6. Ethnic background:
    a. White
    b. Black or African-American
    c. Native American
    d. Asian or Pacific islander
    e. Hispanic or Latina
    f. Middle Eastern
    g. Other
7. Marital Status

8. Do you have dependent care obligations? Y/N. Please describe

Appendix G

Distribution Table –Finding # 1 – Perceptions of Leadership

Pseudonym		Managing People					Managing tasks			Managing Self			Personality attributes	
		Caring			Communicating									
		Know the needs	Caring	Mentoring	Listen	Communicate	Financial growth	Management Skills	Organization sills	Situational awareness	Self-awareness / control	Ethics & values	Personality attributes	
Academic Leadership	Audrey	x	x	x		x								
	Daisy				x							x		
	Emily			x	x			x					x	
	Eva				x		x						x	
	Francis	x	x	x		x					x			
	Gladys	x	x	x	x					x	x	x	x	
	Jane			x		x					x	x		
	Kate	x		x	x					x		x	x	
	Olivia			x	x			x	x		x	x	x	
	Sarah		x					x			x			
	Ursula					x				x				
	Vera			x		x					x		x	
	Xena		x	x	x						x		x	
	Zoe		x				x	x			x			
Hospital Leadership	Claire	x	x	x		x		x				x	x	
	Diane	x								x		x	x	
	Rachel				x	x			x				x	
	Tania			x					x					
	Walda		x	x	x	x		x		x				
	Yolanda		x		x						x		x	
No Leadership	Beatrix			x								x	x	
	Carla	x		x		x	x							
	Hannah	x	x	x	x	x				x		x	x	
	Irene	x	x	x	x		x						x	
	Mary		x		x						x	x	x	
	Nancy	x							x	x			x	
	Patty		x						x	x	x		x	
Total		10	13	16	13	10	4	6	5	8	12	10	19	
%		35%	48%	59%	48%	37%	15%	22%	18.5%	30%	44%	37%	70%	
Section		23 (85%)			20 (74%)		13 (48%)			24 (89%)			19 (70%)	

Appendix H

Distribution Table – Finding #2 – Environmental Factors

Pseudonyms		Culture		Relations		Gender issues			Gatekeeping
		Integrating culture	Changing culture	Relations-Challenges	Relations-Facilitators	Female Role Models	Gender bias		Gatekeeping
							Harassment	Expectations	Opportunities	
Academic Leadership	Audrey	x		x	x	x		x	x	x
	Daisy					x		x		
	Emily	x		x			x	x	x	x
	Eva		x	x	x			x		
	Francis	x								
	Gladys			x					x	
	Jane	x		x						
	Kate	x	x			x			x	x
	Olivia					x			x	x
	Sarah			x	x					
	Ursula	x	x	x	x	x			x	
	Vera	x		x	x				x	
	Xena	x				x			x	x
	Zoe		x	x				x	x	
Hospital Leadership	Claire	x	x	x			x	x	x	x
	Diane		x	x	x					
	Rachel									
	Tania	x	x	x	x				x	x
	Walda		x	x	x	x			x	
	Yolanda	x		x	x					
No Leadership	Beatrix		x	x		x	x		x	x
	Carla	x		x		x				x
	Hannah								x	x
	Irene	x			x	x			x	x
	Mary									
	Nancy									
	Patty	x	x							
Total		14	9	16	10	10	3	6	15	11
%		52%	33%	59%	37%	37%	11%	22%	56%	41%
Section %		18 (67%)		17 (63%)		19 (70%)				11 (41%)

Appendix I

Distribution Table – Finding #2 – Structural Factors

Pseudonyms		Getting the job done						Career Advancement								
		Resources			Financial			Faculty development			Portfolio development			Promotions	Transparency	
		Time & Schedules	Personnel	Equipment & Offices	Bureaucracy	Pay & Compensation	Productivity expectations	Mentors Presence	Mentors Absence	Networking	Access to leaders	Committees / Titles	Leading without a title	Token appointment		
Academic Leadership	Audrey		X			X		X	X		X	X	X		X	
	Daisy	X						X	X	X		X			X	X
	Emily		X	X			X		X	X		X	X		X	
	Eva				X						X	X				
	Francis	X			X			X			X	X			X	X
	Gladys		X			X	X	X	X	X			X			
	Jane	X	X	X	X			X		X	X	X				X
	Kate			X	X				X		X	X		X	X	
	Olivia	X			X			X	X		X	X		X	X	X
	Sarah							X	X			X	X	X	X	
	Ursula	X		X		X	X		X		X			X		X
	Vera	X	X	X	X		X	X	X							X
	Xena	X	X						X		X			X	X	X
	Zoe	X	X			X	X	X	X		X		X			X
Hospital Leadership	Claire	X		X			X	X		X	X		X			X
	Diane			X	X			X						X		
	Rachel	X						X		X	X	X			X	
	Tania			X				X			X					
	Walda		X			X		X			X	X	X		X	
	Yolanda	X							X			X				X
No Leadership	Beatrix			X				X							X	
	Carla		X	X			X		X		X			X	X	
	Hannah	X					X	X				X				X
	Irene	X	X	X	X	X	X	X	X	X		X			X	X
	Mary	X	X		X		X				X	X		X	X	X
	Nancy	X	X					X			X					X
	Patty				X				X							
Total		15	12	11	10	6	10	18	15	7	16	15	7	8	13	9
%		56%	44%	41%	37%	22%	37%	67%	56%	26%	59%	56%	26%	30%	48%	33%
Section %		26 (96%)				12 (44%)		27 (100%)				22 (81%)			13 (48%)	9 (33%)

Appendix J

Distribution Table – Finding #2 – Situational Factors

Pseudonyms		Dependent care				Partners			Geographic factors	
		Physical & time	Emotional demands			Gender differences	Partners & Career Paths	Partners & Home Life	Partners as Challenges	Anchor	Mobility
			Apprehension	Guilt	Acceptance						
Academic Leadership	Audrey	x		x		x	x	x	x		
	Daisy	x		x	x	x	x	x		x	
	Emily						x				
	Eva				x		x				x
	Francis			x		x		x	x	x	
	Gladys	x		x	x		x	x			
	Jane	x		x		x					
	Kate	x		x				x			
	Olivia					x					
	Sarah				x		x	x			
	Ursula		x				x				
	Vera		x								
	Xena	x		x	x	x	x	x			
	Zoe	x					x		x		x
Hospital Leadership	Claire	x								x	
	Diane	x			x			x			
	Rachel	x	x					x			
	Tania	x			x		x	x			
	Walda	x					x				
	Yolanda	x				x				x	
No Leadership	Beatrix	x			x		x				
	Carla	x						x		x	
	Hannah			x					x	x	
	Irene	x	x			x		x			
	Mary	x		x		x		x	x		x
	Nancy										
	Patty	x			x		x				
Total		18	4	9	9	9	13	13	5	6	3
%		67%	15%	33%	33%	33%	48%	48%	19%	22%	11%
Section %		25 (93%)					21 (78%)			9 (33%)	

Appendix K

Distribution Table – Finding #2 – Motivational Factors

Pseudonyms		Desires and Interest			Negotiations		Self-efficacy		Gender stereotypes
		Actively seeking / Have sought	Contentment	Lack of interest	Facilitators	Challenges	Facilitator	Challenges	
Academic Leadership	Audrey	x	x	x	x	x	x	x	x
	Daisy	x	x	x		x	x		x
	Emily	x			x		x		x
	Eva	x		x			x	x	
	Francis			x		x		x	
	Gladys	x	x	x	x	x	x		
	Jane	x	x	x		x	x		
	Kate	x					x	x	
	Olivia		x	x	x	x	x		x
	Sarah	x		x			x		x
	Ursula		x	x	x	x		x	
	Vera	x	x	x	x	x	x	x	
	Xena	x			x	x	x	x	x
	Zoe	x			x	x	x		x
Hospital	Claire		x	x			x		x
	Diane		x			x	x		x
	Rachel		x				x		
	Tania	x				x	x		
	Walda	x	x			x	x		
	Yolanda	x	x			x	x		
No Leadership	Beatrix	x		x		x	x		x
	Carla			x	x				
	Hannah	x		x			x		
	Irene	x			x	x	x		
	Mary			x		x			
	Nancy			x					
	Patty		x	x				x	
Total		17	13	17	10	17	21	8	10
%		63%	48%	63%	37%	63%	78%	30%	37%

Appendix L

Distribution Table – Finding #3 – Rewards

Pseudonyms		Making a difference	Patient care	Training & Education	Recognition	Interpersonal relations	Promotions
Academic Leadership	Audrey		x			x	x
	Daisy	x	x			x	
	Emily		x	x	x		
	Eva				x	x	
	Francis	x					
	Gladys	x				x	
	Jane	x	x	x		x	
	Kate		x				
	Olivia	x		x	x		
	Sarah	x	x		x	x	
	Ursula	x	x	x			
	Vera	x	x	x			
	Xena	x					x
	Zoe	x	x		x		x
Hospital Leadership	Claire	x	x				
	Diane		x		x		
	Rachel	x	x	x			
	Tania	x			x		
	Walda					x	x
	Yolanda	x	x		x	x	
No Leadership	Beatrix	x	x	x			
	Carla	x	x				
	Hannah	x	x		x	x	
	Irene		x				
	Mary	x	x	x		x	
	Nancy	x	x				
	Patty	x	x				
Total		20	20	8	9	10	4
%		74%	74%	30%	33%	37%	15%

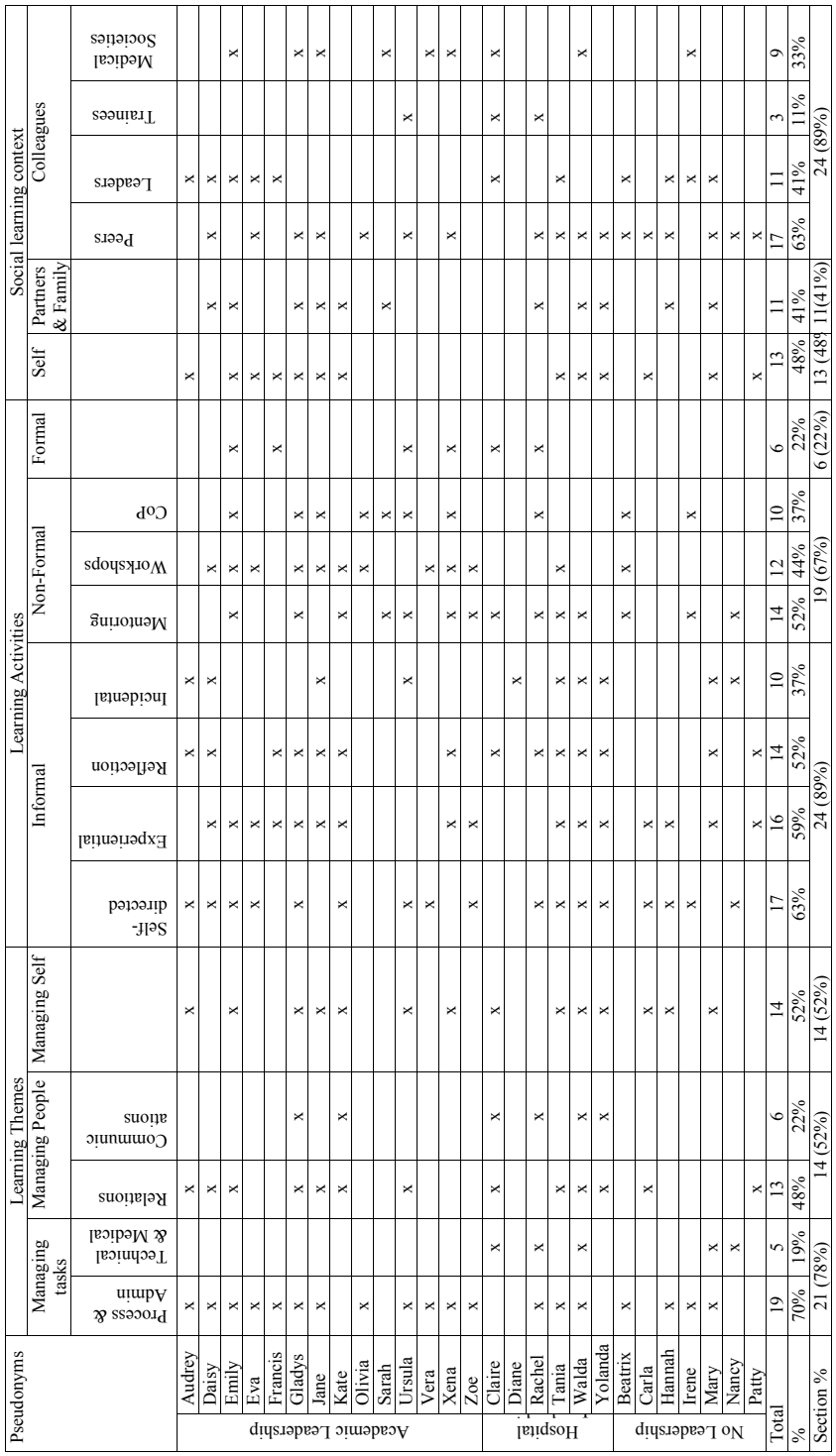
Appendix M

Distribution Table – Finding #3 – Sacrifices

Pseudonyms		Personal Wellness	Time		Patient Care
			Family Time	Personal Time	
Academic Leadership	Audrey	x	x		x
	Daisy	x	x	x	
	Emily	x			
	Eva			x	
	Francis	x	x	x	
	Gladys				
	Jane	x	x		
	Kate	x	x		
	Olivia	x	x		x
	Sarah				x
	Ursula				x
	Vera	x		x	
	Xena	x	x		
	Zoe			x	
Hospital Leadership	Claire	x	x		
	Diane				
	Rachel				
	Tania				
	Walda				
	Yolanda	x			
No Leadership	Beatrix				
	Carla	x			
	Hannah	x	x		
	Irene	x		x	
	Mary	x	x		x
	Nancy				x
	Patty	x	x		x
Total		16	11	7	7
%		59%	41%	26%	26%
Section %		16 (59%)	15 (56%)		7 (26%)

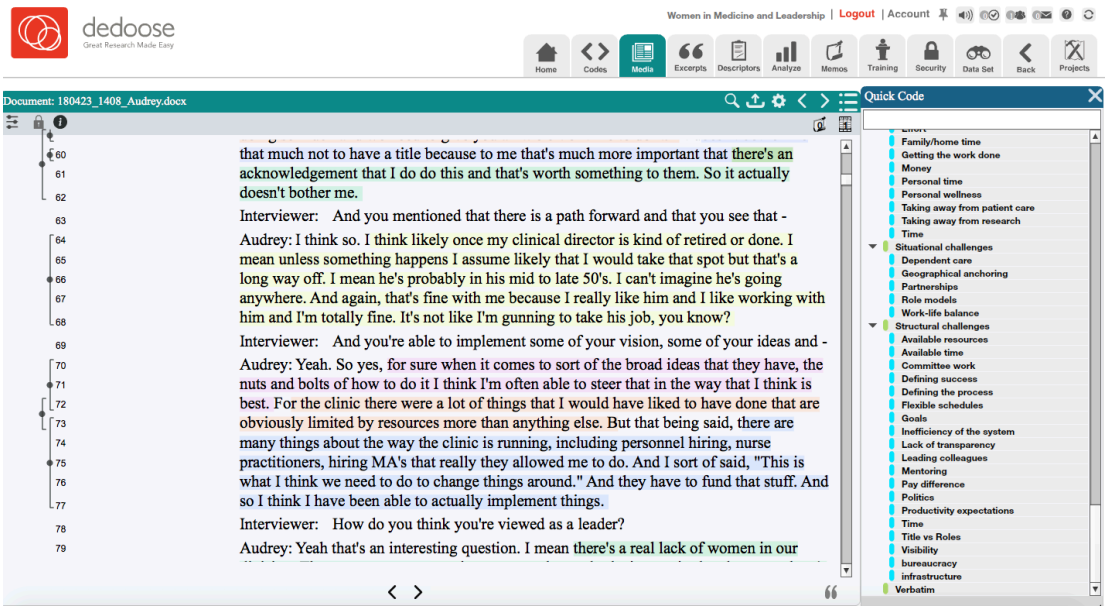
Appendix N

Distribution Table – Finding #4 – Learning Paths



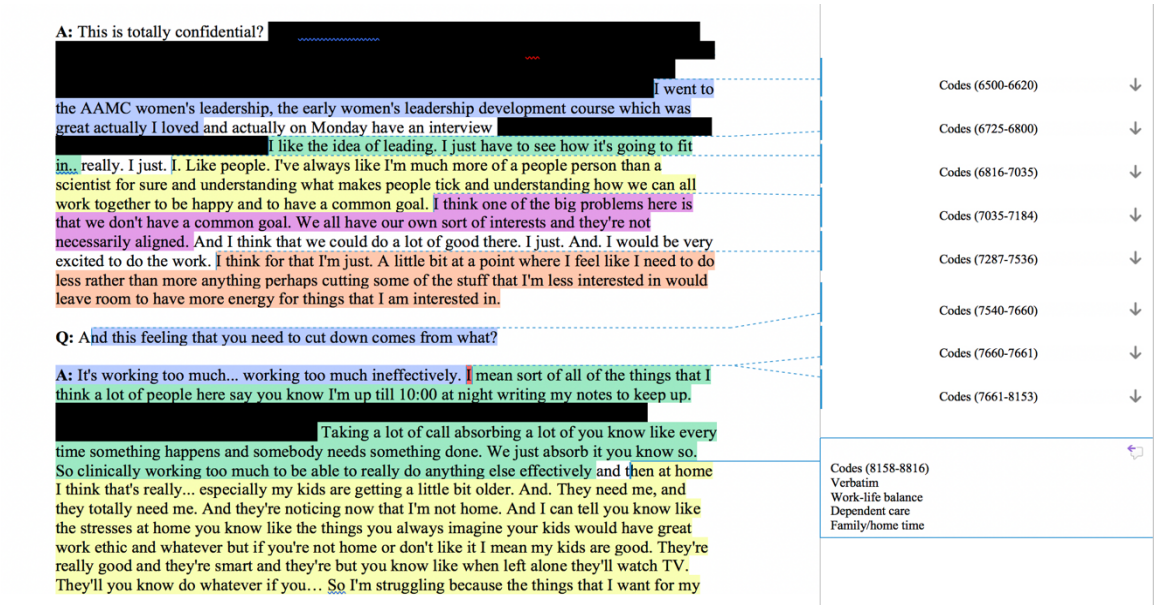
Appendix Oa

Coding excerpts



Appendix Ob

Coding excerpts



Appendix P

Sample Executive Summary

Background
The interview was conducted part of a case study into women's perceptions of leadership in academic medicine, comparing those who are and those who are not in institutionally-defined leadership roles. The semi-structured interview was designed to explore perceived challenges, facilitators, sacrifices and rewards to positions of leadership in academic medicine. In addition, personal views about characteristics of leaders in academic medicine were gleaned. The following is a thematic summary of the findings.
Date of Interview: Feb 1, 2018
Length of interview: 75min
Path in medicine / into leadership

- Discussed current roles in the department and the institution, as well as previously held leadership positions in other academic centers
- Interest in specific career focus resulting from personal experiences

Ideal and/or observed characteristics of good leaders in academic medicine

- Making sure people/trainees "feel they are heard", "they had a voice"
- Addressing concerns when raised
- Knowing the people and their needs; caring for their personal issues; supportive; empathy
- Having a vision that can others can believe in
- What makes leaders successful are a different set of attributes from what got them into leadership; discussed the importance of possessing business skills, of have a compelling vision and understanding the politics
- Discussed the importance of emotional intelligence in leaders and the soft skills of leadership
- Described good leaders as trustworthy

Personal leadership attributes

- Willingness to listen and find solutions
- Not positioning self to climb a career ladder
- Ability and willingness to network; not being intimidated by positions of power
- Desire for establishing warm relationships at work and in the social networks

Facilitators of career advancement

- Keeping an open mind about the leadership position; focusing on making a difference and having influence in physician wellbeing
- Importance of relationship with direct supervisor or boss
- Importance of clinical work
- Discussed importance of mentors and sponsors advocating on the individual's behalf in securing opportunities
- Establishing connections with leaders and self-advocacy
- Observing the importance of external and national funding for advancing in academic medicine, publications in high impact journals

- Understanding the politics and anticipating upcoming changes allows one to plan for next steps better.
- Given opportunities to establish credibility; willingness to put the effort and get the job done

Challenges to career advancement or leadership

- Role definition is seen as "dynamic" because innovative; also fluctuates with cohort of trainees
- Having the personal "bandwith" to engage in the leadership role and its demands
- Life demands and dependent care placing strain on ability to engage fully in exploring other roles
- Dealing with politics that designate different roles for different "parties"
- Lack of transparency on how the system works for gaining a seat at the table; lack of transparency in promotion criteria; Lack of clarity of the importance of title promotion to associate or professor; process unclear and the reason/need for it not clear
- Lack of time to devote to the job; the need for creativity
- Having to prove oneself in a new and different environment, with new colleagues and a different system
- Need for a fair part-time system within the institution that is not "demeaning and demoralizing" and that penalizes those who choose it.
- Maternity and dependent care set women back "10 years behind" on the career path, behind their men counterparts
- Lack of time and "bandwidth" to prepare for negotiations or conversations with chair or leader; to formulate problems and possible solutions
- Geographic anchoring to NYC

Sacrifices on a career or leadership path

- Having to "sacrifice home for work repeatedly." Or at expense of personal wellbeing; working on academic projects on weekends
- Requirements for academic advancement and the process are seen as "sacrifices"
- The importance of being there for the children, and described the feeling of being needed at home
- Gender differences: Women take on more than men; the self-imposed pressure of comparing the involvement of a working mom with that of a stay at home mom.

Rewards on the career path

- Financial stability; established career
- Having influence on trainees; enjoying interpersonal relationships
- Clinical experiences offered by the institution
- Social network in the city

Learning

- Through formal training, developed networking opportunities with "high ranking" individuals
- Experiences and beliefs from growing-up: trusting, respecting but willing to question authority
- Work ethics acquired growing up

Summary completed on: Nov 14, 2018

Appendix Q

Additional Quotes – Finding #1

Management of people	
Audrey	They're just not good managers of people and I can really see the people suffering below, beneath. You know they're really kind of floundering. […] The [program] completely fell apart because the person who was in charge of it didn't care about the fellows and didn't care about education.
Audrey	I actually felt I was upset because I felt manipulated. I felt it was unfair. I felt that that was a really unfair way of doing it. He cold called me out of nowhere. He wasn't emailing me and saying I want to have a conversation with you about this, he just called my cellphone about something that was kind of a big deal. It was really unfair. When I got off the phone with him, I was almost in tears. I was so upset. I mean I was very tired, been working so hard that week. And it was 'cause it was a terrible timing for him to throw that on me. But in my mind, I was just like, 'How am I gonna do this? He's giving this huge thing to me.' […] Which is not an easy thing to do. And I just felt totally overwhelmed. Like how am I gonna do this! And I really was almost in tears. I might have even eventually cried later that weekend.
Mary	I feel bad if I make people feel bad or sad, or say something they don't like, there's too much of that catholic guilt (laughing). It's deep. So, I want everyone to be happy. And that would probably impair me of being a leader too, trying to please everybody. I have too much of that.
Rachel	I have found that being approachable and being open to hearing other people's opinions, whether or not I agree with them or whether or not that's something that I want to pursue or I want to support. I think that is incredibly helpful in accomplishing whatever task, or goal, or scenario I want to form.
Jane	I think you need to make it clear what it is, because if you want people around you to buy into it, they need to know what they're buying into. I think also that makes people more willing to do a behavior if they know this is for the good of ... If they're in alignment with what those things are.
Claire	I think they're really good communicators. They're very clear on expectations […] I really think it's communication, is really the number one thing for me.
Rachel	I think clear, transparent, and open communication seems to be a really important component of an effective leader, and those who are stuck behind closed doors and don't really talk to people, or share, or even make clear what their goals are for the group that they're leading really flounder, or don't get the support that they need and then they flounder.

Audrey	I actually felt I was upset because I felt manipulated. I felt it was unfair. I felt that that was a really unfair way of doing it. He cold called me out of nowhere. He wasn't emailing me and saying I want to have a conversation with you about this, he just called my cellphone about something that was kind of a big deal. It was really unfair. When I got off the phone with him, I was almost in tears. I was so upset. […] I might have even eventually cried later that weekend.
Management of tasks	
Sarah	Their management style is very micromanaging. They want their finger in every single pie, and cannot let their people do anything on their own without getting cleared by them for fear of I don't know what. That sort of leader is not really one that builds up your staff to be secure in themselves to become leaders in other ways.
Tania	One of the things that I think most highly of in the people I see in leadership positions is organization. I think the people that I see with the really strong organization, whether it be like organizing a fax and an email or just structuring their day, whatever it is, I think those people I kind of value the most, maybe because I feel like I'm always striving towards organization. I don't know if I'm always as organized as a I'd like to be, so maybe that's why I value that as much.
Olivia	He is a disorganized mess. You would have a meeting that should take three minutes to say let's do this, this and this. It would take an hour and you would never get to this, this, and this. Nothing would be decided. You would come out feeling like you wasted an hour and you had no directions.
Management of self	
Gladys	You know, so there are a lot of people who surround themselves by yes-men, and they could even make it to president, you know? (chuckles) But that doesn't help you keep in touch with what's going on, and you have to know whether people are successful, whether the programs are successful. You can't just say 'we have the best residency,' just because you wish it so!
Vera	I think that vision is a huge quality […] I think that's the most important in my mind. Obviously, the skill to make it work is very important too but I guess until you have that vision nothing will happen.
Ursula	I try to be friendly […] I try to highlight personal accomplishments, family personal celebrations. One of the [trainees] had a baby, those are things that we celebrate and try to really boost the morale.

Appendix R

Additional Quotes – Finding #2 – Environmental Factors

Relations-challenge	
Audrey	She and I used to commiserate and complain all the time. And then, all of a sudden, now I'm sort of overseeing her operation and she has a lot of deficits that I can now see as I've sort of moved up. And so, that relationship I have found to be extremely challenging to manage because I think she sort of resents the fact that I've gone from this to above her and have to control her and manage her a little bit and I think that's hard for her. It's definitely been hard for me.
Yolanda	When you feel sad at your job, and you feel that you don't respect what you're doing, and you don't feel that your colleagues are respecting you at various moments, I think that that makes working hard. And that's something that I experienced a good deal more when I was younger. I don't typically have blue days about work anymore, although, boy I sure have in the past.
Relations-facilitator	
Audrey	[a junior colleague] knocked on my door. And we were talking for a little bit and then she says to me, 'Do you think you and I can have lunch one day because I feel like you really seem to be going somewhere and you seem to have a good handle on this place and you're really moving. And you have […] kids, I don't know how you do it.' And she's saying this to me and I was thinking to myself, 'Oh my God, I'm somebody that this junior person is looking up to!'
Gender issues	
Gender bias - expectations	
Audrey	if I looked at the sheer number of hours, I know I work more hours than [men colleagues] do. I know I do. And whether that is because I have to or because I feel like I have to just to make sure everybody knows I'm working really hard and I'm here. I don't know which one it is. It's probably a little of both.
Daisy	It's sort of annoying that you're asking 'cause you're anxious. Which is sort of like, 'women are anxious.' But it's like you just wanna know. It's not about anxiety. It's about this total unknown. You just wanna know what are the steps, what are you supposed to be doing?
Eva	Now most of the really successful men leaders also that I've seen are able to have a conversation and are able to walk through a floor and, you know, engage with people that way. It's not that they don't. I think it's more expected of women and I think if you can't do that, you get penalized more when you're a woman than when you're a man.
Claire	'Well, you really shouldn't be friends with ancillary staff.' I was like, 'What does that mean?' He's like, 'Well, it makes it so that people don't respect you the same way.' Meanwhile, two of my [colleagues] […] were sleeping with half the nurses in the hospital. I just had two friends!

Gender bias-opportunities	
Zoe	I have had a couple patients that, no question about it, and it might be both my gender and my minority status where they've come in to see me and they've took one look at me and realized I was a minority female and they were quick to want to leave the room. And they knew that they weren't going to ... I knew I wasn't going to see them again. I knew the minute they looked at me, I was like, 'This is going to be a short conversation and I'm never going to hear from them again.' […] They're going to find Dr. Joe down the road who is a white male and that's their perception of what [a physician] is supposed to look like and that's kind of what's going to make them comfortable [….] I let them go.
Carla	[podcasts] that talk about the pay gap between women and men […] and so the conclusion in all of these podcasts is that it's not that they're getting paid differently, it's that they have different jobs. Women are choosing jobs that are flexible. […] if you look at it from that perspective, it may appear that women are not choosing leadership positions because they don't want it or […] because it's not so flexible. But in my mind, it's that those opportunities don't really exist for women. For example, in a law firm. They said, 'Oh, women are choosing the law firms that are not these big corps because they have such bad hours and they want to choose these law firms that have flexible hours.' Whereas, in my mind, the discrimination has already occurred. The big corps, they don't allow for women to have babies and breast feed and all these things, and so they get marginalized into these no-name law firms.
Tania	I can think of ways that I've asked for leadership spots or projects and been completely forgotten or passed in favor of a male person. I don't know if that has to do with favoritism, but I can only gauge that I'm a woman and I didn't get it, and he's a man and he did.
Gatekeeping	
Kate	that other person who was offered [academic leadership] position. He's at the same level as me and he's again, he was a resident here before […] I had another woman faculty here, they also felt the same way: that women are not being given equal opportunities here like men.
Irene	the department leadership, they have to think of three names in one sort of quarter to promote people; do they think of a man's name or a woman's name first? How do you get your name and your activities constantly in the mind of, you know, leadership?
Sarah	there was one person who was running that. That one person was looking for big name people to give little problem-based learning discussions, because that way people would go to them. I was not a big name person, and even though I kept submitting and submitting, I kept getting 'nobody knows who you are so they're not gonna come to your session,' which I found rather annoying.

Xena	[describes how a woman leader at a national society] got up, and she's like, 'I am so tired of seeing the same five white guys get up and talk about why they should be our leaders,' and everyone was kind of stunned into silence. […] it is true partly because it's an election […] It does become obvious that there's only this certain group of people who try to become the leaders.

Appendix S

Additional Quotes – Finding #2 – Structural Factors

Getting the work done	
Resources	
Audrey	a lot of things that I would have liked to have done that are obviously limited by resources more than anything else.
Time &Schedule	
Ursula	I have to be on the road by 7:00 to have any chance of making it here by 8:00. But if I could be here by 9:30 I could leave at 9:00 so it's a really big difference to be able to juggle those hours a little bit.
Mary	I would drop the ball. I'm already dropping it on the current meetings for the committees [I was put on]. I'm just not showing up. I'm apologizing to people and saying I'm sorry I can't make it. I'm literally... part of it is me, too. If I'm in a situation where I have a clinical thing and a meeting, every single time the meeting's gonna go. Every time.
Daisy	this year, I've been, like, I know what work I get done if I end up working from home because it actually makes better sense.
Personnel	
Walda	[on hiring administrative assistant] She's wonderful, and definitely helps a lot, and has definitely taken off a lot of the assisting things that I was shouldering for a long time. That was a huge change in my role. But not because she's my assistant, […] she's assistant to the group and does administrative tasks.
Equipment	
Diane	OK, we have eight computers and they're all 12 years old and can we please get a new one… you know... and then it's like this whole big justification of that sort of thing. It wasn't terrible though. I mean there were actually very good to work with.
Bureaucracy	
Mary	[on relation between medical center and hospital] they're completely disconnected, they're totally different. It's kind of fascinating. So, you're like, how do I make changes to an institution like this when there's two separate groups that aren't talking. They're totally independent.
Diane	[the academic center] would get in to the mix with contractual renegotiations. And I had to either sit there, and not be involved, or be involved, or they would not involve me and just skip around me and then end up with a product that was like something that I couldn't work with.
Irene	they put an administrator to put a stop to it, to just say: 'no, we're not going to give you anything.' […] the administrators somehow just saying no, and it's not very supportive in a way, it's not really helpful. I feel they're more obstructive in a way, the administrators. I don't know if people feel like I do.

Financial	
Pay & compensation	
Audrey	with that job though […] came a title but there was no salary support of any kind, or protection and at the time I took that job it was okay because it wasn't that big but it really had ballooned and grown.
Carla	We get a base salary. I don't know how that's determined and it's not the same between each person […] My base salary, these things, sometimes they change and you don't necessarily know why.
Walda	I don't think that I'm unfairly paid. I feel that I do, sometimes just for very brief moments, feel like, 'Wow! How did that person get that salary?' And that's not necessarily all men.
Walda	[her husband's advice]: 'just forget about comparison. […] Do you feel like you're getting paid enough? That's just the fact. Don't look around. Just ask yourself, do we have enough? […]' And the answer's always been yes. It's always been yes.
Productivity	
Zoe	I wish I could get rid of the financial stuff in my career, I wish I could just do my job and get paid a salary and never have to worry about the finances.
Zoe	I don't know how we quantify that. I mean, I can quantify the number of consults I get and talk about all the different departments that require my help and all the emails, like… I guess I could save all the emails, the hundreds of emails I get each month on [asking for her unofficial opinion].
Walda	[about RVU] "It's a bottom line. It's RVUs, […] it's not like you come to negotiate for more and I'm giving you more. You threaten to leave ... There's none of that.
Career Advancement	
Mentoring	
Kate	If I want to do research in that area, I don't have anyone to help me […] If I have to start it would be start from the scratch and for a junior person it's not easy to start from the scratch. If you don't have a mentor it's just impossible to start because then nobody will be introducing you in the committees. Nobody would be introducing you to the journals where they will send manuscripts for review. From that point of view, you don't get any help. These types of opportunities, no matter how smart you are, you will never be able to get by yourself. You need a mentor to help you get into those things. Which is definitely lacking here. Mentors who are here they help you with the minor things in the department related things, but not at the national level.
Patty	It's not easy to be a mentor. It's a lot, because it is very selfless. I don't think everybody has that amount of time and energy to put into what they're ... Everyone's busy.
Yolanda	I dove back into research at that point. But not having good, solid mentorship, it was hard to make the research work […] I ended up being frustrated and being unhappy because I was a jack of many trades and a master of none. I didn't have a mentor; I was putting it

	together myself. In the end, it works for me, but there were many tough moments through those years.
Kate	I see people here who started 10 years ago and they are at the same position because, in my opinion, that might be their lack of interest but I don't think so. More that it is they do not have good mentors here to help them.
Sarah	[advice from her mentor]: 'if you wanna get anywhere, you have to get out of the institution. You have to.' I never forgot that, so I was always reaching outside nationally and stuff like that.
Vera	That's one of the problems I have, is that I haven't found mentors […] And actually, that's something that in my whole career has been an issue. Sometimes I say oh, maybe there's something about me that I'm not reaching out to mentors enough or they're not taking me in because of something I'm putting out there, but I think lack of mentorship is…I don't think it's just me.
Olivia	In an ideal world, we all find a mentor who really paid attention to us. Not everyone does. If you find a mentor, take advantage of them. Anything they offer you do, do it. I think your first 5-10 years, anything they offer you to do, do it so you meet the people, so they remember you. They put you on this committee. Then they ask you to run this committee. When you get on the committee, you do a good job.
Walda	I don't think I could have done this without the mentorship, without that investment in time and belief in what I'm capable of doing.
Networks	
Jane	We got together as a group and really helped support each other, did some almost book clubs, if you will, together, and tried to really make it almost like a self-study of how to improve. And I think it's a tremendous resource of being able to bounce ideas off other people and recognize strengths of your ideas you may not have fully realized, or also weaknesses, or potential challenges and ways to overcome them.
Emily	[describing her past behavior] do my work, leave. Do my work, leave… [that] was the worst thing I could have done. Less isolation and more involvement and that's why I get more involved now, 'cause when you get into trouble, you need allies, and you will get into trouble.
Irene	[contacts other] writing to a lot of the people in leadership positions who are writing consensus statements, or doing programs, or prejudging, and just saying 'yes' to any opportunity, saying 'I'm available, you know, is there something I can do?'
Access to leaders	
Jane	If you want a good working relationship, you do have to involve [the leaders] in the decision making. There are ways that you can tweak it so it's easier for them to say yes, even though they may have said no initially, if you frame it in a way that helps them see why you think it should be a certain way.

Audrey	So I think that was part of how I started to build a relationship with him and he must have some [liked something] about the way I organized it or did it, he must have liked it because he wanted me to keep doing it which was weird because it definitely was not the way they had done it.
Audrey	I never realized my value to them. I mean, just the idea that I would have been invited to go and express that I was unhappy and they would actually want to change something to keep me. In my mind, I just thought they'd be like, 'Fine then, just leave. There's somebody else, like, two seconds that we can hire in your place.' I just felt so replaceable.
Portfolio development	
Committees/titles	
Audrey	I thought by putting my head down and saying yes to everything, that was what I should do. And that probably was true for a year or two since I kind of hadn't trained here and needed to get some buy-in from them. But after that, I think I actually didn't respect me because I never sort of went to them and said, 'This is what I want. I want to move forward. I want to do this.' And I think once I did that they were like, 'Oh, you are actually interested in doing something.'
Audrey	Part of it is, when you have that job you do control a lot of things […] I actually think that was a little bit how I got a little bit of my foot in the door for the administrative side of things, and I ended up dealing with [direct leader] much more. And actually, dealing with everybody.
Walda	[My boss] was describing it as riding the wave. Things just happen if it's a good idea, think people gravitate towards it and it just grows and snowballs into things and so I'm in that phase right now.
Hannah	When I started, I said yes to everything because you never know what it leads to. And you're never know who you're going to meet along the way. [However] the committees are probably not what launches your career. Maybe there's a few.
Hannah	Once you prove to be a reliable person who is a problem solver, who can get stuff done, and it just kind of rolls that way.
Rachel	It was unclear to him what the role was supposed to mean. So, I'm still learning. I basically on a near weekly basis I'm learning about some other committee meeting that I'm supposed to be going to and I didn't know […] So, I'm learning more about the infrastructure overall, but […] what exactly I'm expected to do is not clear. And it's up to me. What I was told [by direct leaders] is I can do whatever I… Like I should set some goals for myself and then do them. So, I can decide whatever I want to do and then fulfill it. So, I have set a couple of goals for myself but there is no specific, like, 'These are the things I want.'
Token appointments	
Olivia	[the academic center] was desperate to get some women in leadership and I was like this kind of fiery, outspoken person. […] within six months or a year of being here, they put me on the leadership committee, because they wanted a woman and I seemed to be able to

	hold my own, I think. They gave me a… they created a position, really, to put me in leadership. That position was faculty development, that didn't exist. So, I'm an assistant professor out three years and I'm supposed to be developing faculty? Who's really gonna listen to me?
Promotions	
Audrey	Not even just women, younger junior guys ask me too about promotion and all this. And I tell them, you have to go to this annual meeting and you need to bring it up and you need to go through and ask [the leader] whether you're meeting the criteria.
Audrey	He and I met last year and I said to myself, 'the one thing I need to talk to him about is the promotion.' 'Cause I'm just wondering what's the timeline, […] No one talks about when. […] So at the end of the meeting, […] it didn't come up and I was thinking to myself, 'I can't believe he's not gonna bring it up.' […] I had actually printed out the tracks from the website and so at the end I said, 'There is one more thing. I want to talk about my promotion. I don't know even which one of these tracks I'm on. And I don't know if I'm meeting the expectations.' And so he pulls it out and he seems to be for the first time… kind of like, he's like, 'well you kind of meet and actually multiple one of these,' […] and so he's like 'yeah we should talk about it going into the next year or two.' And then my [direct boss] keeps saying to me, 'it needs to go in this year. It's time, it's time, it's time.' I'm like, 'Well I'm not the one to decide.'"
Francis	When you hear the stories of recent people have been put up for promotion who have not gotten it. Then you think 'oh, this system is not transparent and not fair.' There are specific examples within the department of people who were put up for promotion last year thinking that they had made the criteria and they didn't get it. And so then, that's demoralizing.
Transparency	
Audrey	I did notice that our bank account had increased in size but I thought it was because of [we forgot] to pay the rent […] And so randomly, [direct leader] runs into me in the hallway. He goes, 'I meant to ask you, did you get the bonus 'cause you didn't say anything.' And I was like, 'A bonus?' And all of a sudden, I'm like, 'Oh my God. Did you?' […] And I said to him, 'But you could have told me so I could say thank you.'

Appendix T

Additional Quotes – Finding #2 – Situational Factors

Audrey	There's a challenge of where does work end? I feel like that is just a huge challenge. I never feel like I've done enough. I could work 24/7.
Patty	If the opportunity presented itself and I was really excited about it, I still feel like I need to have a balance of my life outside of work and my kids and my family. So, if you'd asked me if I want to spend tons more time at work doing things that are not necessarily going to be reimbursed, I would say no. I think I have a lot to do with my home and my children and my other outside interests, and making my life, not being a slave to my job or my kids. Also bettering myself, too.
Mary	[my mom] would always tell us from an early age that 'I'm a better mom because I work. I love my job. I love my friends at my job. I would never not work.' And she's like 'you never know what's going to happen in your life so you better do something you love,' ever since I was little. So, it was never a question that I was going to do something.
Dependent care	
Physical/time demands	
Daisy	There will be an impact on my family and my kids or I assume there will be. Or someone said the other day, 'Why does it have to be? Why can't you just be like I'm not gonna be here every morning at 8:00 a.m.?'
Carla	I'm not making breakfast, I'm not getting them dressed for school. I'm out the door at seven. I have my nannies doing that. I don't pick them up from school. I don't take them to their after-school stuff during the week. I don't do breakfast, lunch, or dinner, or any of that.
Emotional burden	
Jane	It's that tricky part of recognizing I don't want to be a full-time mom at home, but I don't want to just have my nose down to the grindstone and feel like I didn't see my kids grow up, either. Not that I wouldn't see them grow up, but miss those nuances that you only get if you're around, I think.
Jane	I felt my mom was there for me like 110%. And I think I haven't really thought about that that much until now that I've had kids myself. And it's interesting, because my mom raised me with this message of like, 'You need to go and make your own money and support yourself.' Because eventually she did work and have her own, and I've always felt like that's such an important lesson. I can always stand on my feet. I don't need someone to put a roof over my head, and I want to teach my children the same thing. By the same token, never being home when my kids come home from school doesn't feel right to me either.

Gender differences	
Yolanda	I remember at one point, one of my colleagues [at another institution], who had a couple of young children, was spending an afternoon playing golf, and I was sort of horrified. I said, 'Wait,' to myself, 'You work this really hard, demanding job that takes up, you know, 70 or 80 hours of your work week, and then, you're going to go and play golf instead of being with your kids? Do you have your priorities straight?' And for me, there was a lot of trying to figure out, 'Do I go off to this meeting, or do I spend the time with the kids?' So, for me, it was either work or kids early on, and I think that sometimes men didn't have that hold that was quite as strong.
Francis	Men compartmentalize it so much better than women do. And they also take on a lot less than women. So, women, I believe, they do this to themselves. I do this to myself and I compare myself to stay-at-home moms. Although nobody else makes comparisons only me. And so, I want to make [my dependents] dinner every day. You should see the birthday parties that I throw for them. You should see the Halloween costumes that I make for them. I carry their life in what I consider very meaningful ways. That is not necessary. They would be just as happy with store bought costumes […] I put all this extra pressure ...because those are the life-giving things for me. I actually get joy out of them. So, it's not a straining thing that I consider a stress.
Hannah	When my husband comes home, he goes upstairs. I mean he loves his kids, he plays with them. But I mean, he's not, like, he's not dying to have more time with them […] he's happy to let other people do it, and I don't feel that way.
Partners	
Partners and home life	
Xena	My husband is great as long as you tell him what to do. He'll take them to doctors' appointments as long as I've done the scheduling, and all the talking. Does this sound familiar? I don't know. I think it's probably fairly common.

Appendix U

Additional Quotes – Finding #2 – Motivational Factors

Ursula	I step away from wanting to take those women in leadership management courses or how to be a better manager just because I'm afraid to highlight myself as a good manager and then be in a position where I can't get anything done."
Jane	I think it's a challenge of how can you be present and mindful, and have time for yourself, and have time for your family, and not be required to be a 24/7 leader? Because I also don't think being a 24/7 leader is good for my brain, where it's constant like this fire, this fire: put it out, put it out.
Nancy	He has multiple meetings everywhere but he still takes care of his patients. He has them on his cell phone all the time. That's great for him. I don't think I could handle that much stress.
Negotiations	
Xena	When I went to tell him I was leaving, the way I prefaced it was I said, 'As you know, I haven't been happy here in the current situation for a while.' And he said, 'Really? I didn't know that.' And I thought, 'yeah, I've spoken with you about it several times.' But I didn't say that. That was what was going on in my head, but somehow, I think I wasn't…I think that's the way people are. I think people don't really hear your dissatisfaction until you say, 'Okay, bye.' Then all the sudden, then they listen, which is unfortunate. It shouldn't be that way. We should be able to get people, work with people before they get to the point of having another job.
Zoe	I think guys will ask for the moon and the stars and the sun and we, as females, will ask for the moon and hope that that's what we get and then we're always, like, surprised.
Self-efficacy	
Vera	I'm very good at tackling problems and staying calm and just going with the facts and not letting emotions and drama [get in the way]
Gender stereotypes	
Xena	I'm actually, I'm not all soft, and smooth on the edges or anything like that. I know what I want. This is kind of the stereotypical man thing of: 'I know what I want.' If I think that something is going to serve the interest of the patients better, then I'm going to fight for it. I'm not going to really care who is going to be offended by me fighting for things.

Appendix V

Additional Quotes – Findings #3 – Rewards and Sacrifices

Rewards	
Jane	Sometimes […] we think we want something, because it's a position of power, and it's a title, and that's exciting to have that. But are those day-in-and-day-out responsibilities that go along with that position something we really want to take on? And my guess is, I don't know the answer. I don't think it's a simple answer, because I think it's probably all of it. There's parts of that leadership position that can be very exciting, can provide the ability to effect change. By the same token, it may require 24/7, putting out small fires, which are not that much fun and can be distracting. So, the question is: how can you carve out a leadership position that allows you to do most of the things you really want to and less of the things that you don't? And I think that's a real legitimate challenge.
Beatrix	I don't have a need to be the person in the front of the room pushing an agenda. I like pushing the agenda. I like moving things forward. Because I don't have a need to be that person, I can get a lot done. That in itself is satisfactory. I think that's what real politics is: if you can see moving agendas forward for the good of the people without having to be like [the leader].
Vera	I would say actually it's the patient care, until recently, when I was just so busy. I mean I really like helping. I know that sounds trite, but I really like when patients say 'Oh, thank you for helping me. You thought about my problem, some doctors just rush me through.' And that I get a lot of internal satisfaction from that.
Patty	I feel like I take better care of the patient, and better care of the whole family, and just make the whole experience pretty good, because I think I can kind of tailor it to what they want out of their experience.
Olivia	To see them come in as interns and to watch how they shape and the things that they get involved in. The things they get excited about when they find something they love. That's very rewarding to me.
Mary	[This] is why I'm here, and why I stayed, and why I took this job. It's because of my partners, not because of the hospital, the institution, the name, […]. It's none of that. It's the people and my [colleagues].
Gladys	I like to be able to make things happen that I think are good for [faculty in her work unit] and good for the department. You know, you find these win-wins and it's like very fulfilling: everybody walks away happy. […] So I really enjoy it. I like the interpersonal connection.

Sacrifices	
Xena	[I was told] 'You are so busy, and this is just not anything that means anything. It doesn't help your career. It doesn't help with your standing in the department. You're not going to get more money […] Why are you even bothering? You're way too busy to deal with this.' […] I just think it matters to get up there and do it. I can think of other people that I think will be more willing to get up and try because I did. […] In a way, it's almost like I'm sacrificing myself to some greater good.
Carla	Somebody told me once, it might have been my mom, 'You can always quit but you cannot always go back to working once you quit, so don't quit. Figure it out, figure out a balance while you're working and if it sucks you can walk away. But don't start out not having a job because that opportunity may never come.' I'm doing that. I'm sticking with it until it kills me and then I'll quit.
Irene	I end up feel like I'm doing three jobs all the time, every day, like: Monday through Friday, there's clinical work. There's the basic science stuff, and Saturday and Sunday it's not unusual for me to be writing grants like all day. And I think that becomes a strain on the work-life balance because you're doing all three things at once.
Kate	Oh well, when you have kids you don't have to think about it, you have no option. When you have a full-time job, you have to be here at 8:00 no matter what; even if you are sick, you have to get your food ready for the kids when they come home because if you don't help them who will help them?
Audrey	I don't think I gave myself enough credit when my kids were very small about how hard it was. I think I always wanted to pretend like it wasn't hard and I could do that and do this and it wasn't taking away from work. But when I look back on it now, I realize it totally was. […] And even if it's just your mind is there or you're totally sleep deprived or whatever, you know? […] I mean it's a total distraction and I have only really come to appreciate that in retrospect as my kids have gotten older and I've been able to succeed more, I realized part of it is the home life is not as much of a drain on my brain as it used to be.
Yolanda	I did the things that absolutely had to be done by me. Things that I could delegate, I delegated. And made a lot of choices about where to put my effort. You know, do I want to write a grant, do I want to write a paper, or would I rather be going to the opera and socializing with friends and traveling the world? […] I made the choices based on what made me feel constructively happy, not joyous in the moment, but having an overall sense of this is a good, productive, enjoyable choice to make at any moment.
Francis	I was able to go to no school events. Not one. That to me is not sustainable.

Patty	I feel like in academics a lot of leaders stop doing their job that got them there. […] If you go in the medical field, and then kind of as you rise up you get more administrative stuff […] I feel like what's weird is that what gets you to your leadership position doesn't really keep you. You then change jobs, essentially. Then you're just a manager. None of us go to medical school to be managers. We go to medical school to be a doctor. Then you're a manager, and you don't know how to manage, probably, as well.